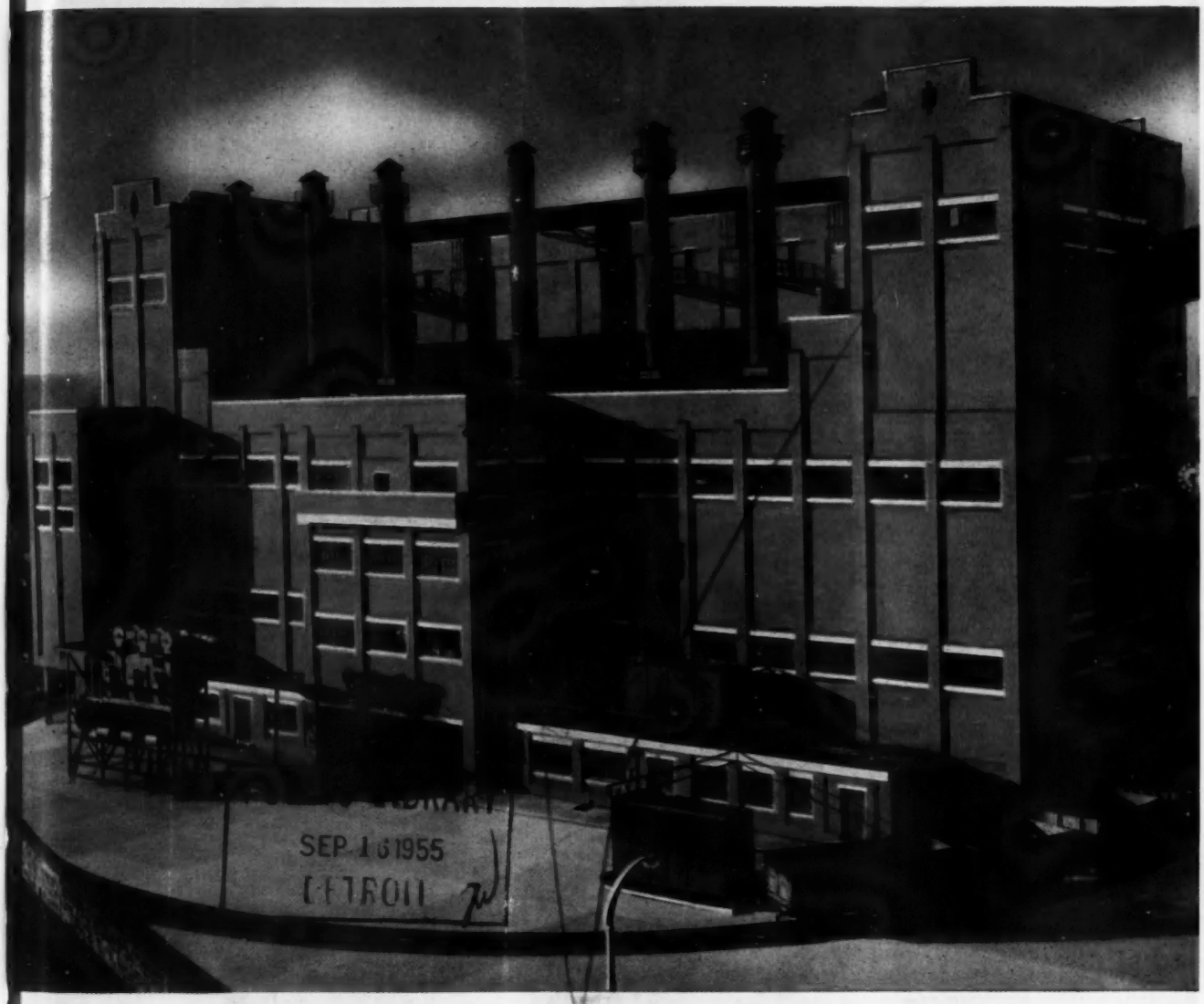
Gas Journal

VOL. 283. 107th YEAR. LONDON, AUGUST 31, 1955. Nº 4813. PRICE 1/3



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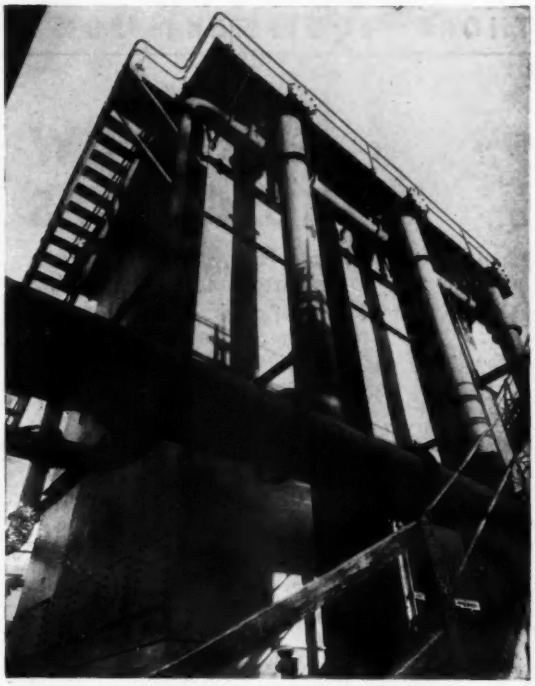

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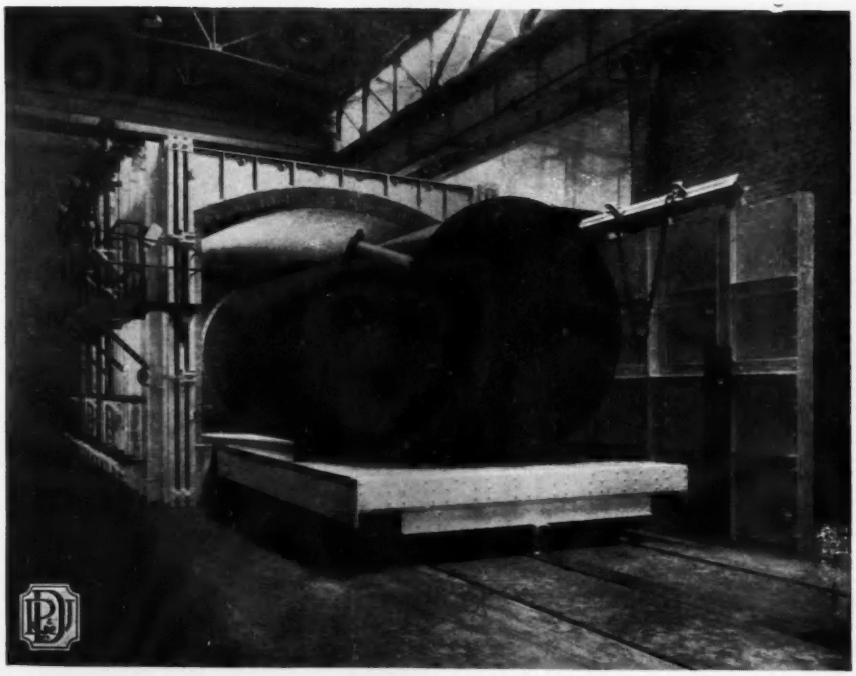

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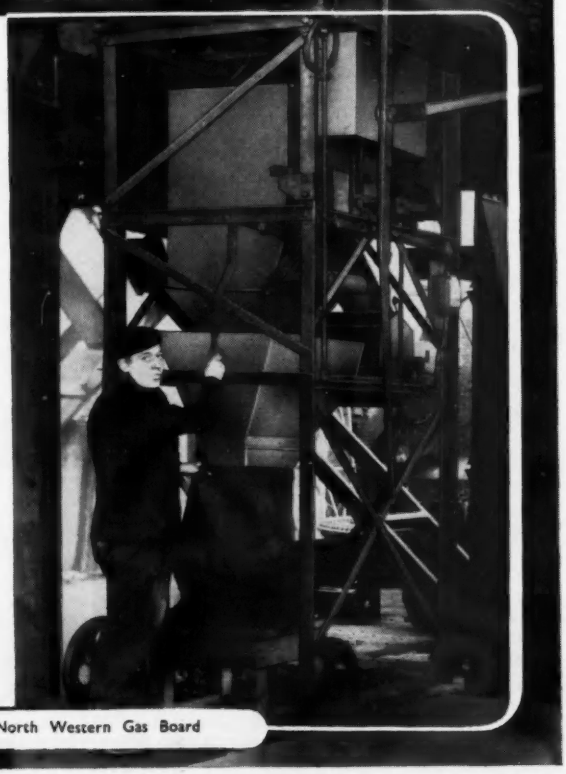

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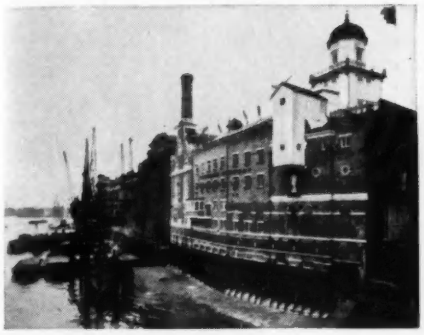

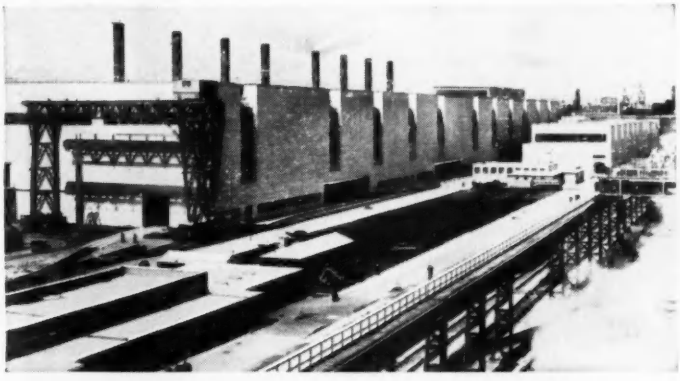

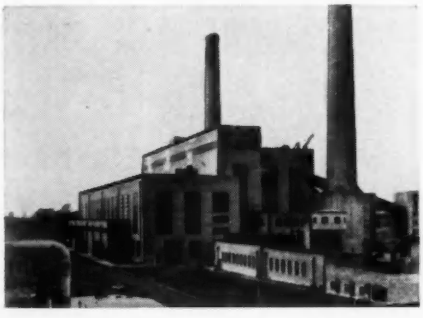

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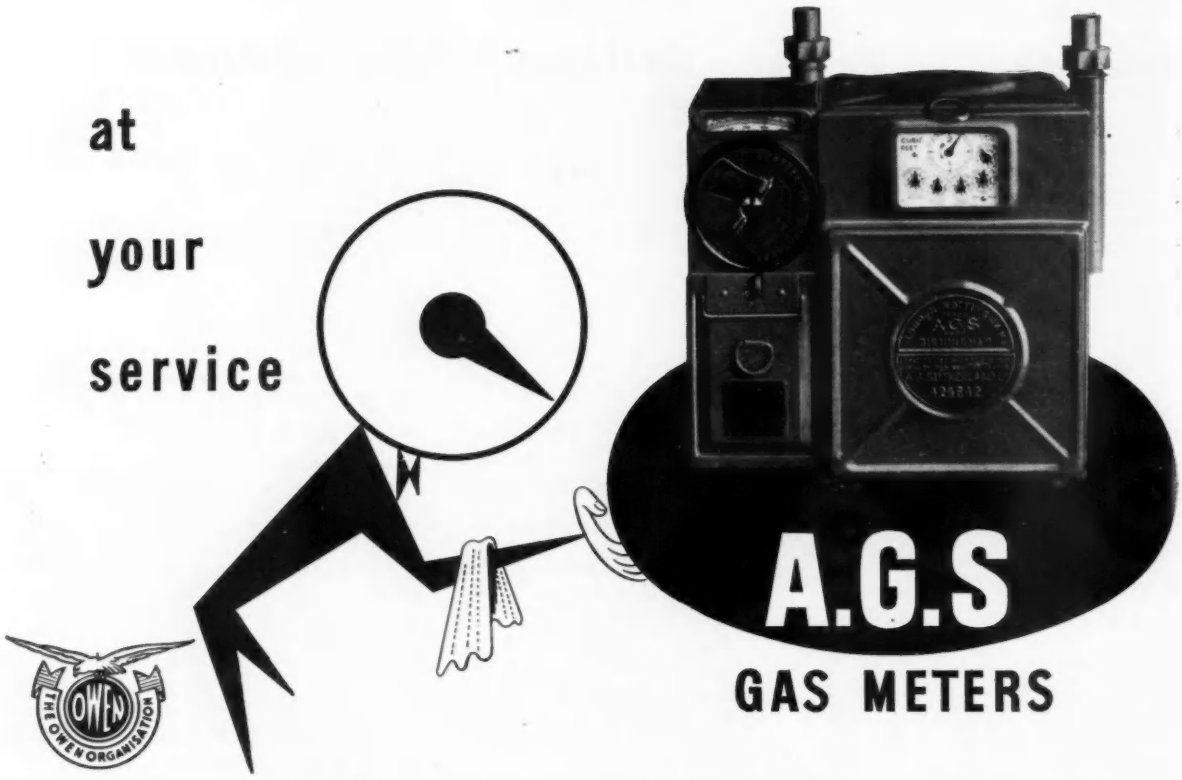

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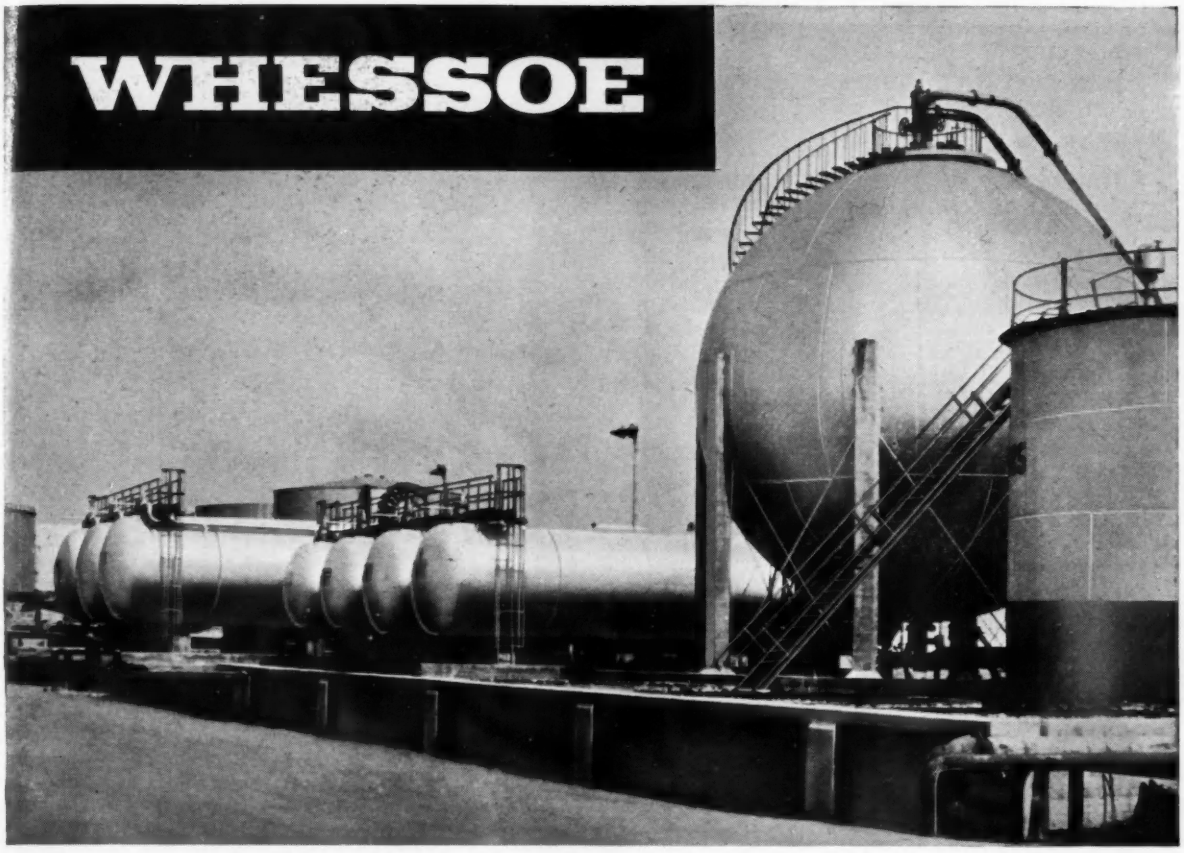

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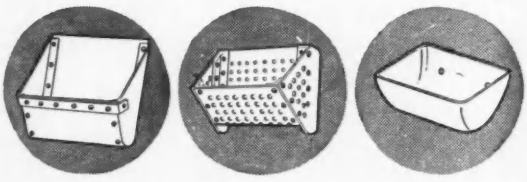

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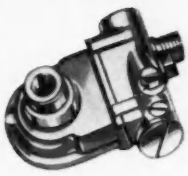

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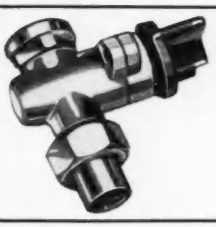

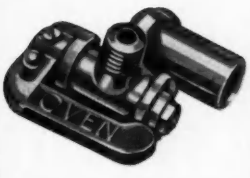

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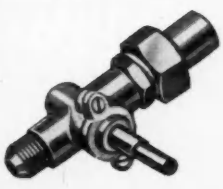

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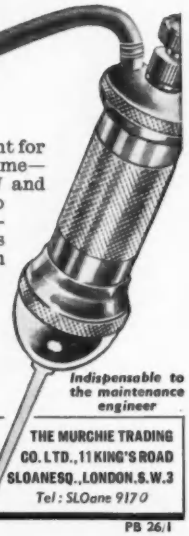

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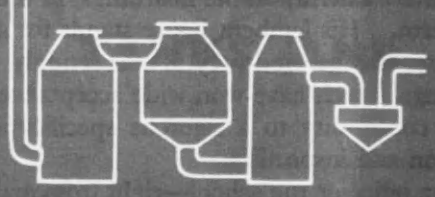

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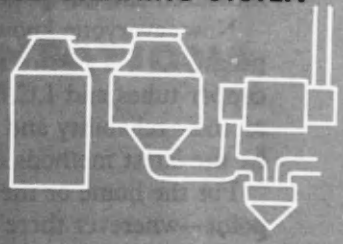

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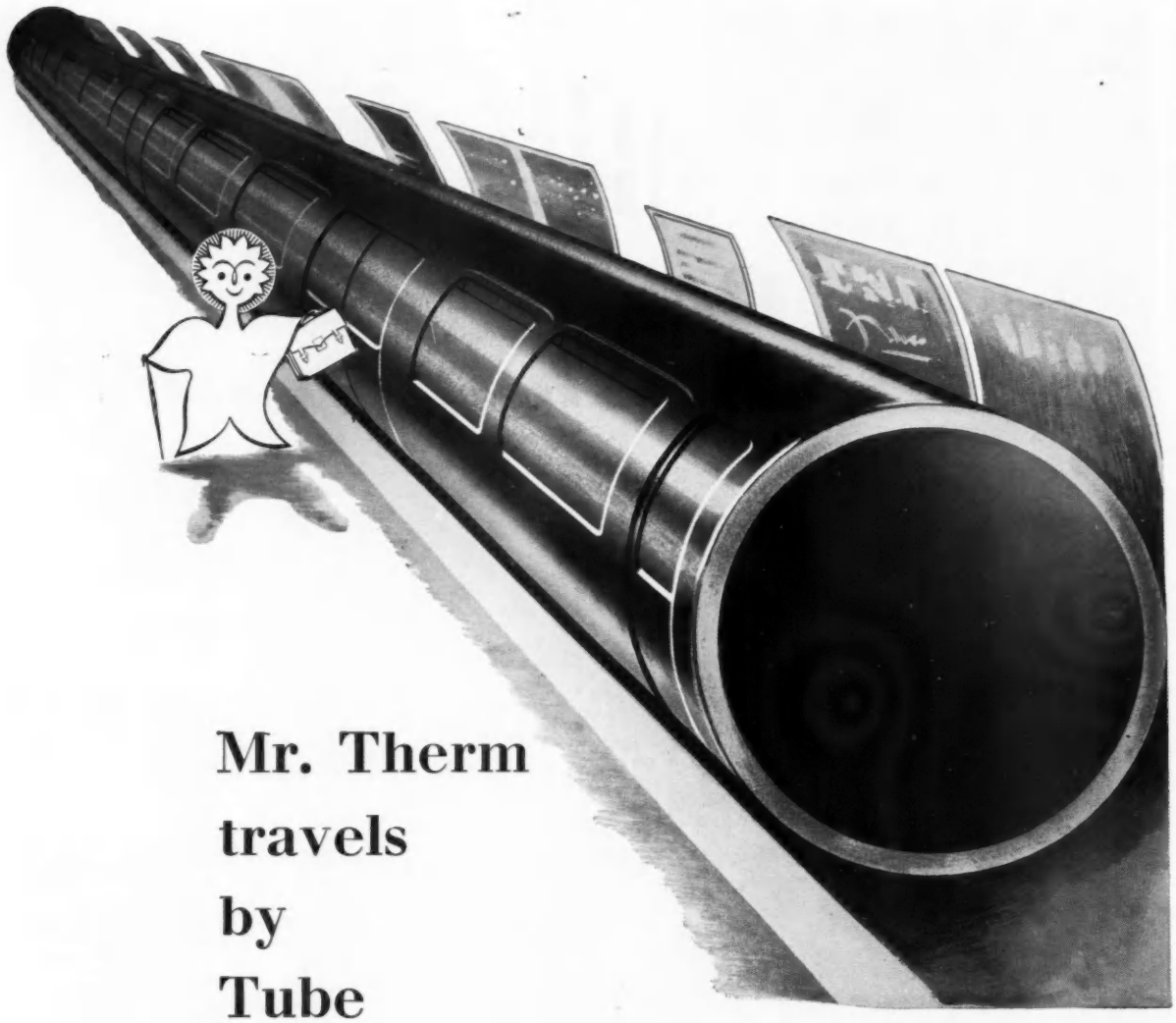

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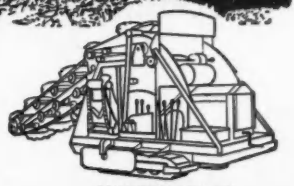

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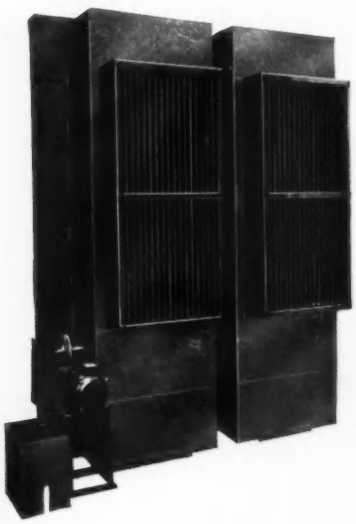

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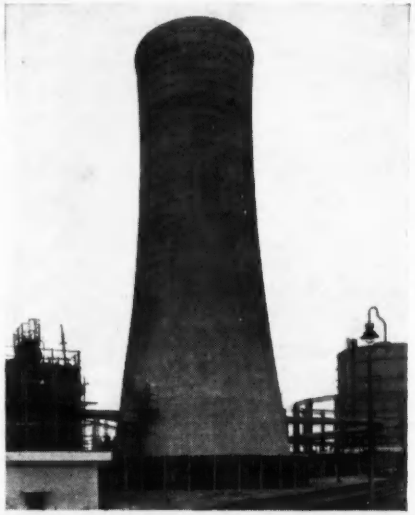

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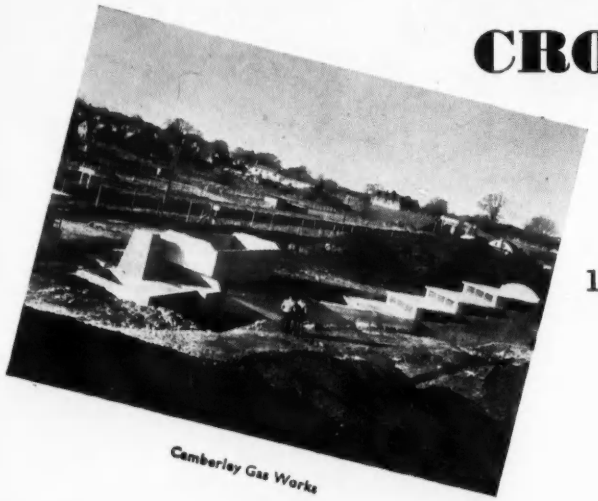
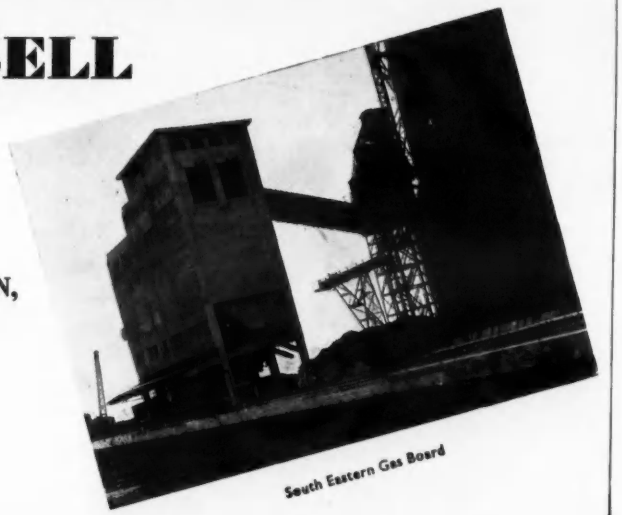
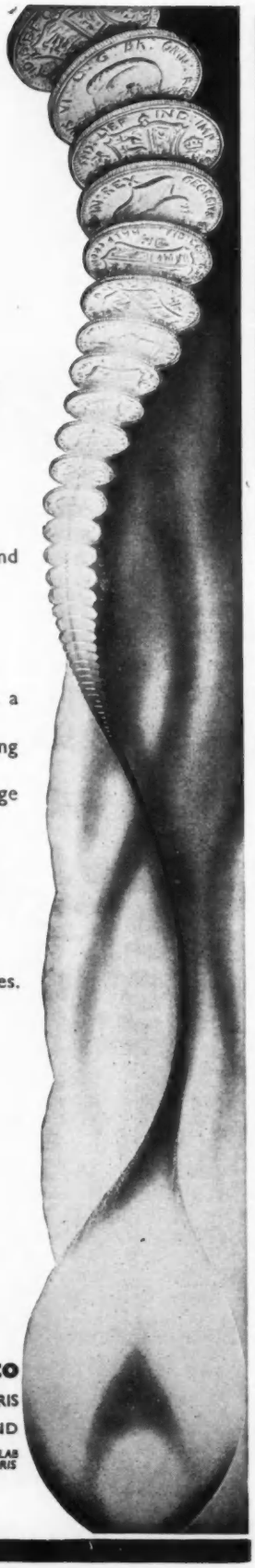


Camberley Gas Works



South Eastern Gas Board

loss of heat— waste of money



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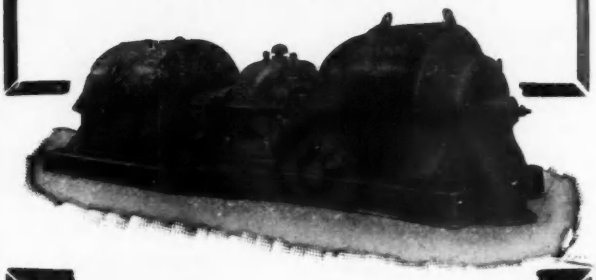

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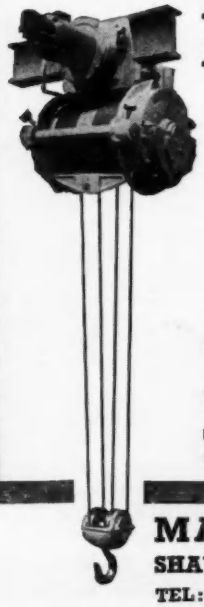

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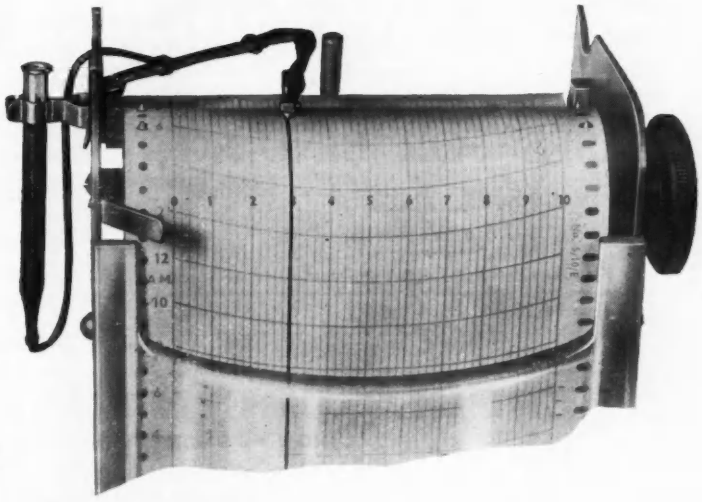

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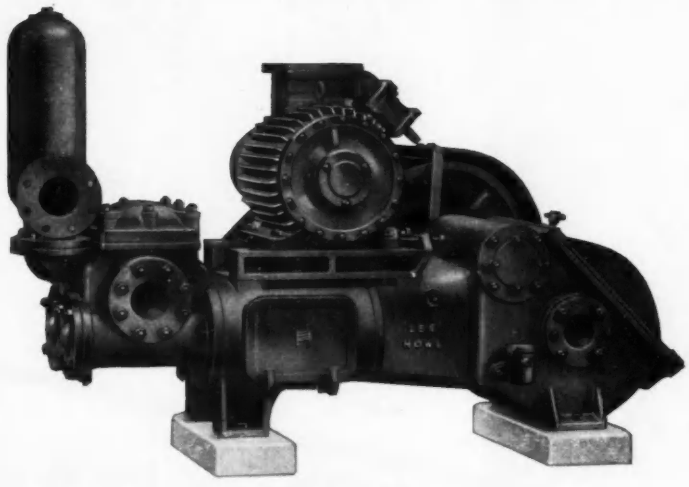

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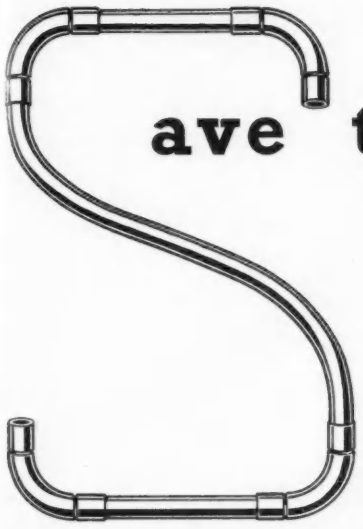

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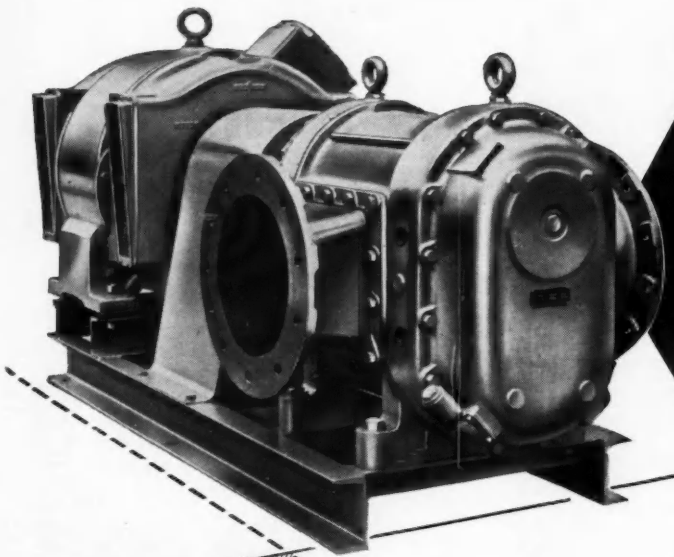

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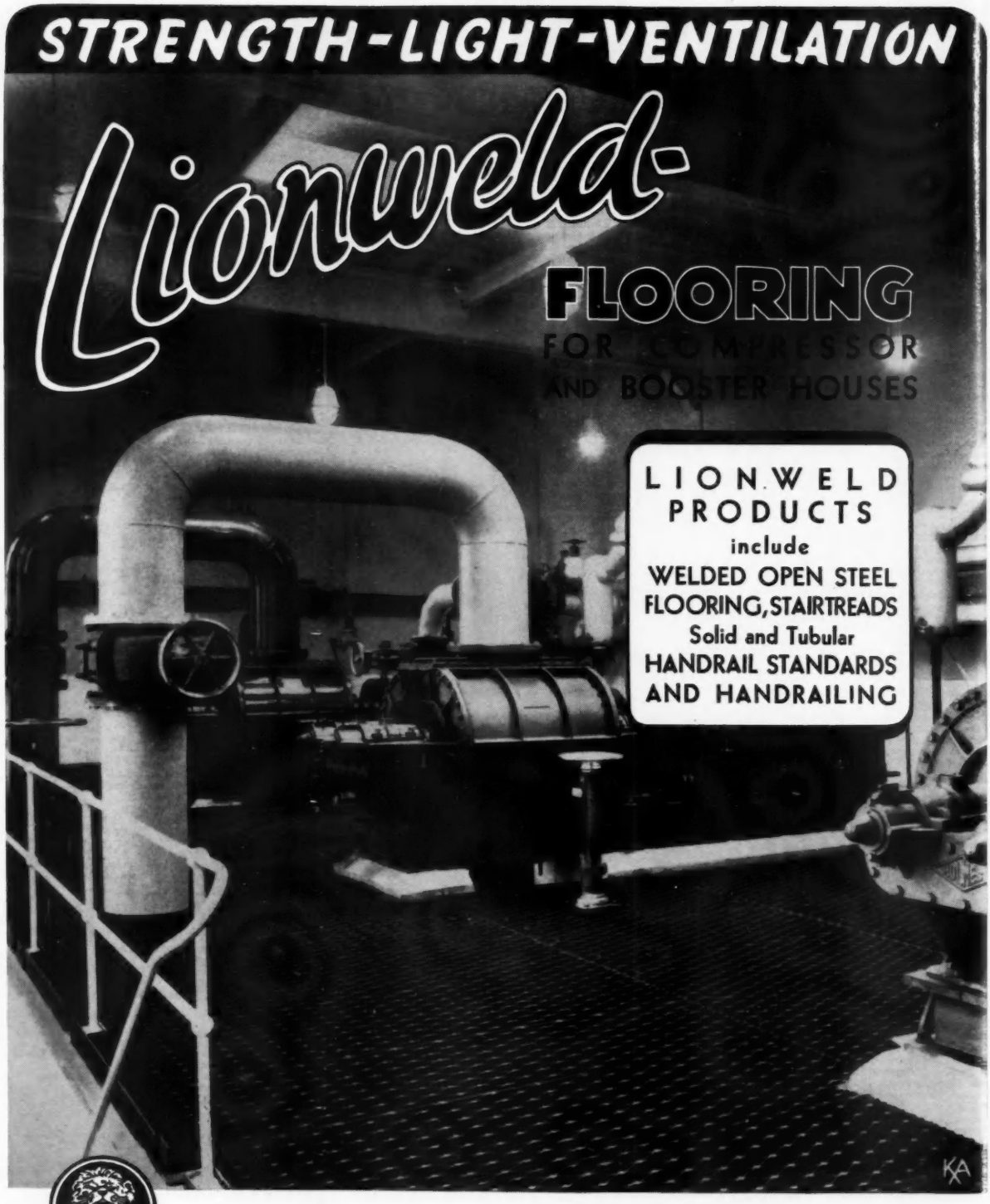

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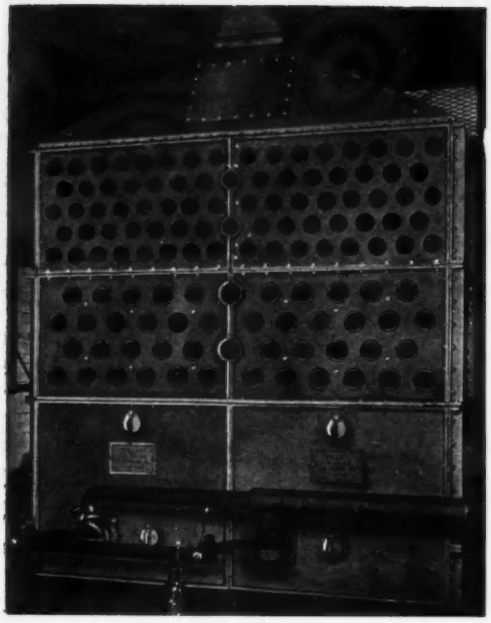

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Gas Journal

VOL. 283 NO. 4813 August 31, 1955

107TH YEAR

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Gas Journal

VOLUME 283. No. 4813. AUGUST 31, 1955. 107th YEAR

France—the Association Technique

THE 72nd Gas Congress under the auspices of the Association Technique de l'Industrie du Gaz en France and under the Presidency of M. Ferlet, held in Strasbourg from June 27 to July 3, was attended by 600 members and visitors. It is fully reported in the July issue of *Gaz de France; Journal des Usines à Gaz* to whom we are indebted for the information culled from its pages.

Among the distinguished French personages present were M. Le Guellec, President of the Council of Administration of the nationalised Gaz de France, M. Combet, Director-General, M. Mougin, Inspector-General, M. Antoine Bolzinger, Director of Research and his co-Director, M. Delsol, and M.M. Bazille, Biard, and Kec, Past-Presidents. All these gentlemen are well known to us in Britain, both by reputation and by their welcome visits. The Institution of Gas Engineers was represented by the President, Mr. Hutchison, and by Dr. Braunholtz. Among representatives of technical bodies of other countries we note the world-famous names of M. Brabant of the International Gas Union, M. Auguste de Brouwer, President of the Royal Association of Belgian Gas Engineers, and M. Zollikofer of Switzerland.

It has become a tradition since 1949 for the Association to be addressed not only by its President but by the President of the governing body of the nationalised industry. From M. Le Guellec's general survey emerges a picture which differs considerably from that of our own industry. Coke is much more generally used for domestic purposes in France than it is in Britain. The tendency is towards big coke oven plants near the big centres of consumption, but M. Le Guellec uttered a warning against a too great concentration of production involving 'an excessive extension of the means of transport.' For the production of gas, except where coke is a by-product for metallurgical processes, the tendency is towards total gasification. When one studied the balance of carbonization, he said, in view of the present-day relation of the prices of coal and coke (in France) 'it seems no longer opportune to base the gas industry solely on the carbonization of coal.'

M. Marc Ferlet, President-Director-General of the Society for the Development of the Gas Industry in France, President of the Association, pointed out that although this was the 72nd Annual Meeting, it was the 81st Anniversary of the foundation in 1874 of the Association Technique, then existing in two separate organizations. M. Ferlet reviewed the recent work of committees of the Association with some emphasis on the standardization of appliances. 'The struggle was on between the appliance of the bazaar and the appliance of quality.' The popularization of the use of liquified gases, propane and butane, the diversity of resources of the National Gas Service, had emphasized the desirability of a recognized mark of approval covering all the apparatus for the domestic utilization of gaseous fuel. Naturally he dealt most fully with the work of the organization with which he was particularly associated, that for the Development of the Gas Industry in France. A 'Committee of Direction' had been set up with eight representatives of manufacturers and twelve of the national service. It looked to the A.T.G. for technical advice and it was in constant liaison with the associations of architects. An immense body of propaganda is being prepared and emitted, covering all forms of publicity.

The Association Technique as a group of technicians and the Society for the Development of the Gas Industry as a limited company, occupy 'marginal positions' which enable them to play most useful rôles in the life of the industry,' and 'it is certain that if they had not existed it would have been necessary to create them.' Together, they 'constitute, on the technical side and on that of propaganda, a veritable synthesis of all the activities, industrial and commercial, internal and external, of our industry and they serve as a bridge between constructors and technicians of the industry of gas and of carbonization.'

A very pleasant feature of the meeting was the presentation of the Gold Medal of the Association to M. Pierre Mougin, the genial Secretary-General of the Association Technique, who has been a frequent visitor to our own meetings. In his citation, the President said that M. Mougin had assisted in the establishment, 30 years ago, of the regulations which remained in force, in principle, today. He had piloted the transition from, and the amalgamation in 1926 of, the former Union Syndicale and the Syndicat Professionnel into the present Association Technique of which he was the first Secretary-General. When nationalisation arrived he was called to his present important position. The Gold

Medal of the Association was reserved for its greatest servants and has been awarded hitherto only to such personalities as Sainte-Claire Deville and Henri Laurain. On the proposition of M. Nérot, the incoming President, M. Mougin was elected President d'Honneur of the Association.

Twenty-eight papers were presented and discussed. Their subjects show what is interesting the French gas engineer of today. Carbonization is represented directly by only two papers, both relating to coke ovens. On the other hand oil-gas was represented by three papers, while natural gas claimed two, with another on the distribution of propane under pressure. Several aspects of distribution were covered by some eight papers. Two papers dealt with the gum problem and three with utilization. There was one paper, 'Some reflections on the construction and operation of gasworks' which made very interesting reading, since it discussed recent trends in this direction in France, while there were two papers on points of detail in gas-washing, the production of sulphuric acid direct from the hydrogen sulphide in crude gas and the concentration of ammonia liquor. Research claimed eight papers covering a wide range of subjects; the water of constitution of coals, a method of the continuous indication and control of the tar content of gases in the control of electrical precipitation, laboratory research into the blending of low-caking with normal coals in coking, a continuous gas analysis method, oxygen determination in solid fuels, the analyses of natural gases with particular reference to the deposits at Saint-Marcet, gas storage under pressure, and corrosion in transmission and service pipes, 'as a function of the water vapour, oxygen and carbon dioxide contents' of town gas. In subsequent issues of the GAS JOURNAL we hope to present abstracts from a number of these papers.

Three Years' High Authority in Coal and Steel

IN our comment on M. Armand's report to the Council of O.E.E.C. on Energy in Europe we remarked that he appeared to have a 'quite inadequate appreciation of the necessity of coke to the iron and steel industry'. We might go further. The World's scientists gathered at Geneva are encouraging us to look forward to a happy day when all our problems of power supply will be completely solved. The 'blessed name' accepted on all sides, is atomic energy. The other day it was oil. A recent editorial in *Chemistry and Industry*, under the title 'The Fuel Battle' remarked: 'The gas industry would use new processes to make town gas entirely from oil. It was also making interesting arrangements—to take oil and petroleum direct from the refinery. More than a million tons of coal would be *saved* by the gas industry by that use of oil'.

There is here an extraordinary complacency. It is all the more refreshing to find no such complacency with regard to coke supplies in a short report now released by the High Authority of the European Community for Coal and Steel after three years of its work from August, 1952, to August, 1955 (see p. 559 of this issue). Here we are warned that 'the steeply rising tendency of the demand for fuels as a result, mainly, of the increase in iron and steel production—is confronting the coal-mining industry of the Community with serious problems,' obviously related to the supply of suitable coke.

Hard coal production in the six countries of the Community went up by 3% in the first six months of this year over that of the similar period of last year. In the same period that of the United States went up by 19% while that of Great Britain was down by 3%. In the same period, again, crude steel production went up 26.8% in the Community countries, 29.6 in the United States and 5.6% in Great Britain. The point is that steel production is growing fast while coal production is standing still, 'a lack of elasticity in European coal supplies' which can only be met by increasing imports, mainly from America. 'Imports of American coal which up to the autumn of 1954 were around 500,000 metric tons per month, have gone up to over a million tons in recent months'. From the other main source of supply to which the Continent had looked, Great Britain, imports of coal were down by 26%—which is not surprising to anyone in Britain. The High Authority, with its power and its will, to formulate and implement a definite fuel policy, may well contemplate calling in other sources of energy to make up for the coal which the Community lacks. The Authority, at least, seems to be aware that coal production must be maintained, and with it the carbonization plant required to produce the necessary coke, if the production of iron and steel is to be maintained at or above its present level. Coal and steel are inevitably linked together.

The Report is intensely interesting. It indicates not only positive action in the coal and steel sectors which are the direct responsibility of the High Authority, but progress towards 'the extension of European integration in the economic sphere' and ultimately a common economic policy for Europe, leading still further to a Federation of Europe. The lessons for us in Britain are more immediate. It is perfectly right and proper that we should develop the new techniques of atomic energy as fast as we can. And there is no reason why oil should not be used as a substitute for coal in the raising of steam for electricity generation. But we cannot afford to neglect the wise use of our coal as long as we have it. At the risk of repetition it must be said again that oil can only usefully displace coal for gas manufacture in so far as it saves coke. Oil for the peak load will do that. But if we are to have the coke essential to the production of iron and steel, as well as to implement the 'Clean Air' policy, we must have sufficient carbonization plant. And we must see to it that none of the coal suitable for carbonization is frittered away in simple combustion.

Appliance Sales Sag

IT is as yet rather early to gauge the effect of the further hire purchase restrictions imposed by the Chancellor last month, but first signs indicate an acceleration of the sales recession which followed the first imposition of restrictions in February. The new restrictions raise the initial deposit on H.P. transactions for refrigerators, washing machines, domestic space heating appliances, dish washers and drying cabinets from 15% to 33⅓%, although cookers, water heaters and certain boilers remain subject to a 15% deposit and coke fires are still free of restriction. There seems little

doubt that sales of these appliances for the year will not attain anything approaching their 1954 figure. Since February, when hire purchase controls were reintroduced, gas cooker sales have fallen by about 20%—and some authorities put the figure much higher than that—while sales of gas-operated water heaters and washing machines are some 30% lower. It would appear that most area boards held substantial stocks of appliances last February, but when demand fell existing orders were not cancelled. The result is that a number of boards have built up stocks somewhat in excess of their requirements and are now in the process of reducing stocks drastically.

Obviously the situation of the manufacturers is a serious one. Not only are they faced with falling demand resulting from lower sales, but also from the boards' decision to reduce stocks. It is reported that some manufacturers of cookers have had to lay off labour, and manufacturers of water heaters report reduced output. We feel that the industry might spare the appliance makers a sympathetic thought because never once since pre-war days have they been able to plan their production with any degree of confidence. Shortage of raw materials, purchase tax, hire purchase restrictions and, at one time, a general sales lethargy, brought about a degree of uncertainty which precluded any type of long-term planning. Now, despite the generally more healthy position regarding sales and competition between the gas and electricity industries, such factors as Mr. Butler's credit squeeze are continuing to cloud the manufacturers' future with uncertainty. While appreciating that the area boards have their business to run and that they must act according to market conditions, it is perhaps not unfitting that we should say a word in support of the makers who, as we all know, have contributed so much to the development of the industry. We not only need makers of well-designed and efficient equipment—we need as many of them as possible, both large and small. One of the dangers of nationalisation is the tendency to allow the small manufacturer to get lost in the shuffle. That must never be allowed to happen, partly because it is the smaller firms which in the past have frequently produced the most outstanding developments, and partly because their continued existence brings about a better balance and a defence against possible monopolies.

Although the gas appliance sales picture is not a particularly cheerful one at the moment, it must not be thought that electricity is not experiencing difficulties of its own. Because of the lifting of hire purchase controls, electrical companies were enjoying a boom a year ago, but so far this year sales of most types of electrical appliances have been well below the figures achieved during the latter part of 1954. Electric cookers have suffered a sales drop of about 20%, and it is reported that the second quarter's production was 10% less than in either the previous quarter or in the second quarter of last year. Production of electrical immersion heaters has also slowed down, but it is significant that the output of electric storage water heaters for domestic use has expanded steadily since the beginning of 1954 and, between April and June this year, the total was more than 40% higher than in the first quarter of this year and 75% above the second quarter of 1954. It has been reported that Hoover, Ltd., are preparing for a possible cut in production in the autumn, and particular efforts are being made to increase exports. From the national point of view, as well as that of the company concerned, this is obviously a wise move, and we cannot help wondering whether manufacturers of gas appliances are similarly turning their attentions to furthering sales overseas. Among other sales outlets we have in mind the rapid expansion of natural gas in Canada to which attention has been drawn in our columns from time to time.

NOT TOO FAIR!

THE 30th European Trade Fair will take place at Strasbourg from September 3 to 18. Only four days to go and now the 200,000 sq. m. that the Fair covers are practically filled up. Last year there were 3,285 exhibitors among whom were 724 foreign members from 19 different nations. The average number of visitors was 45,036 a day. Already it seems that this year the number of exhibitors will far exceed last year's number. But there have been only 55 applications from British firms for exhibiting space and all those were either manufacturers of agricultural machinery or else of building and public works equipment. Apparently no other industry cared. The Strasbourg Fair is the second largest trade fair in France—second to the Paris Fair—and in a way it is the more important because it is situated at the cross-roads of Europe, at the headquarters of the Council of Europe, in the centre of a highly prosperous area, and at the only large French port on the famous river Rhine. It caters for almost every trade and industry and above all for manufacturers of consumer goods including gas equipment. It seems from reports that the Germans have been quick to realize this and that they are attacking the potential market on all fronts. Perhaps it is natural that the Germans should be to the fore in this matter as they are the closest neighbours to Strasbourg. But it should also be appreciated that the French impositions on imports from Germany are far in excess of those on British goods and that it is made legally easier for the British to sell their products in France than for any other nation. Why then, we have enquired, are there no British firms exhibiting in the gas pavilion?

Several manufacturers have been asked and they all tell much the same story—there are several reasons common to all firms. The cost of labour in Britain and the packing and freight charges to Central Europe are so great that no matter how well favoured our goods are by the French controls system, by the time they reach the potential customers in France their prices are still in excess of those of German goods. A further reason for the absence of British exhibitors in the gas pavilion lies in the completely different forms of heating and cooking that are employed by the French and other Continental householders. By long practice they have become accustomed to using larger hotplates and wider burner spacing than the British, with less use for grills and ovens. Few Continental homes have gas fires—mostly they use central heating. We cannot expect, naturally, to change the habits of the customers so that they will buy our products. In order, then, to secure a market through Strasbourg, our manufacturers would have to bring about a tremendous change in their production programmes. Rightly or wrongly, they say that the expense demanded by such a vast change would be too much of a gamble when the possible gain is considered. Be this as it may, we have to face the fact that competition from Continental gas appliance manufacturers will encroach more and more upon world markets unless we can provide a speedy answer to this urgent problem.

Personal Notes

MR. A. E. C. COLTMAN, A.M.INST.GAS E., Enfield District Manager, Tottenham Division, Eastern Gas Board, has been appointed Stores and Appliances Manager in the Sales and Service Department of the Division, and will, in future, operate from Headquarters at Woodall House, Lordship Lane, Wood Green. He succeeds Mr. T. A. Wolfe, who is retiring after 47 years in the industry, 34 years of which have been with the Eastern Gas Board and its predecessors, the Tottenham and District Gas Company and the Hertford Gas Company.

Mr. Coltman was educated at Tottenham Grammar School and entered the service of the Tottenham and District

Gas Company in 1927 as a Junior Clerk, later joining the Company's apprenticeship scheme. On the completion of his indentures he was made Assistant Inspector at West Green depôt. In 1932 he took charge of Hoddesdon district, then recently acquired by the Tottenham undertaking, and he remained there until he went in the Army in 1943. After his discharge he was made District Manager at Enfield.

The Board's Enfield employees have expressed their thanks to Mr. Coltman for his leadership among them and congratulated him on his appointment to Divisional Headquarters. He received two presentations, one from the staff and the other from members of the Enfield Branch of the G.A.S. Club.

MR. DOUGLAS J. AULT, a West Bromwich man who started work as an office boy with a Smethwick company 35 years ago has now become its Assistant Managing Director. When Mr. Ault left school in 1920 he became office boy at Tangyes, Ltd., the Smethwick hydraulic engineers. In 1936 he became Company Secretary and was later elected to the board of directors. On August 18 the Company announced that he had been appointed Assistant Managing Director on the administrative side of the business.

MR. T. H. RILEY has been appointed Divisional Director of the Gas Plant Division of the Power-Gas Corporation, Ltd. Mr. Riley joined Power-Gas in 1924 and as an apprentice gained his early practical experience on the gas plant built

for I.C.I. at Billingham. Later he served in the Technical Sales Department of the company, and for some years has been responsible for the engineering of the Power-Gas Corporation's projects. His name is also associated with the large ammonia plant which the Power-Gas Corporation built in Sindri for the Government of India.

MISS MARGARET N. FINLAYSON, who has retired after forty years service with the Kirkcaldy (Fife) gas undertaking received gifts from the staff and employees. The presentation was made by Mr. J. H. Fulton, district manager. Miss Finlayson carried out most of the work in connection with demonstrations, exhibitions, and other publicity work in the Kirkcaldy area for about twenty years. She was appointed the first secretary of the local branch of the British Gas Staffs Association, and held this post for three years.

Obituary

MR. PERCY DOUGALL, engineer and manager of the Kidderminster gas undertaking for 38 years until his retirement, has died in hospital at the age of 69. He succeeded his father as general manager of the Kidderminster Gas Company in 1913 and continued as Group Manager after nationalisation of the industry until his retirement in 1951. His father Mr. Archibald Dougall, had followed his uncle, Mr. Andrew Dougall, in the same post, and between them they managed the local gasworks for 81 years. His first managerial post was at Newquay, where he stayed for four years before returning to Kidderminster in 1913. During his managership output of gas from the local works more than doubled, and one of the many additions to the plant for which he was responsible was the huge waterless gasholder in the centre of the town, which is a landmark for miles around.

MR. HARRY JAMES YATES, founder and first Chairman of Radiation Ltd., died on August 28 in his 82nd year.

Diary

September 2.—WALES G.C.C.: Town Hall, Llandudno, 11 a.m.

September 6.—SOUTH EASTERN G.C.C.: Caxton Hall, Westminster, 11 a.m.

September 7.—SOUTH WESTERN G.C.C.: 34, Bridge Street, Taunton, 11 a.m..

September 7.—SOUTHERN G.C.C.: Farnham U.D.C. offices. 11.15 a.m.

September 9.—MANCHESTER AND DISTRICT SECTION, I.G.E.: Visit to the works of the Derbyshire Silica Firebrick Co., Ltd., Friden, Hartington, near Buxton.

September 12-14.—GAS COUNCIL: Gas Sales and Service Conference. 'Heads of Ayr' Holiday Camp, Ayr. (For programme see 'JOURNAL,' July 20, p. 209.)

September 13-16. — ASSOCIATION OF PUBLIC LIGHTING ENGINEERS: Annual Conference, Folkestone.

September 19. — WEST MIDLANDS G.C.C.: Committee Room, Gas Offices, Edmund Street, Birmingham 3. 2.30 p.m.

September 19-20.—EASTERN SECTION, I.G.E.: Annual General Meeting, Chairman's Address, W. A. Evetts; 'Some Problems involved in the Manufacture and Distribution of Gas,' B. Wilkinson; Grand Hotel, Sheringham.

September 21.—MANCHESTER JUNIORS: Visit to K.L. Cranes, Ltd., Letchworth.

September 22. — STANTON IRONWORKS CO., LTD.: Mr. Geoffrey Lloyd, Minister of Fuel and Power, opens coke oven extensions.

September 22.—SCOTTISH ASSOCIATION OF GAS MANAGERS: Annual General Meeting, Town Hall, Inverness.

September 24.—EASTERN JUNIORS: Presidential Meeting, Norwich.

September 28.—IRISH GAS ASSOCIATION: Annual Meeting; Presidential Address, S. L. Doyle (Cork); 'Gas Distribution,' A. L. Allen and J. J. Mahoney; Imperial Hotel, Cork, 10.30 a.m.; afternoon outing to Blarney Castle; annual dinner, Imperial Hotel, 7.30 p.m.

September 29.—NORTH THAMES G.C.C.: Westminster City Hall, 2.30 p.m.

October 4.—SOUTH EASTERN G.C.C.: Caxton Hall, Westminster, S.W.1, 11 a.m.

October 5.—MIDLAND JUNIORS: Report on the Paris visit. Birmingham.

October 14.—MIDLAND SECTION, I.G.E.: Autumn Meeting. Palace Hotel, Buxton. 11.0 a.m. Paper by H. Oliver and K. Carr: 'Some Observations on Refractories for Gas Retorts.'

October 19.—SOUTH WESTERN SECTION, I.G.E.: Annual General Meeting. Address by Chairman, W. B. Claridge.

October 25.—EASTERN G.C.C.: Connaught Rooms, Great Queen Street, W.C.2, 11 a.m.

Coal and Steel in Europe

Three years have elapsed since the High Authority of the European Community for Coal and Steel began its work on August 10, 1952. In this statement the Authority reports its progress to date.

SINCE August 10, 1952, when the High Authority first assumed its functions, half of the five-year transition period which began six months later, on February 10, 1953, with the introduction of the Common Market, has elapsed.

'The High Authority has achieved its initial objective of setting up a common market and is now tackling such problems as the simplification of administrative regulations, the abolition of formalities affecting trade between member countries, the complete removal of discrimination in transport rates, the full application of the Treaty provisions concerning agreements and arrangements affecting prices, and the harmonizing of internal taxes and the impact of social charges.'

This is how the June, 1955, report of the regional office of the United Nations, the Economic Commission for Europe (E.C.E.) in Geneva, summarized the position of the European steel market at this stage of its development.

The Community and the General Economic Situation

Against the background of the general economic expansion in the Western world, the Community occupies an exceptionally favourable position. By comparison with preceding years, the industrial production index in the Community countries for the first six months of 1955 has risen by 12% as against only 7% in Great Britain and 9% in the United States.

TABLE I.—Industrial Production Index (1949 = 100)

	1953 Jan.-June	1953 July-Dec.	1954 Jan.-June	1954 July-Dec.	1955 Jan.-June*	Prod. incr. Jan.-June '55 c.f. Jan.-June '54
Belgium ..	112	114	120	123	129	+ 7.5%
France ..	119	111	127	126	140	+10.2%
Saar ..	138	135	143	151	156	+ 9.1%
Germany ..	169	184	188	207	219	+16.5%
Italy ..	142	153	157	164	169	+ 7.6%
Luxembourg	126	111	115	127	134	+16.5%
Netherlands	122	130	138	143	151	+ 9.4%
Community	140	144	153	161	172	+12.4%
U.K. ..	114	114	122	121	130	+ 6.6%
U.S. ..	139	135	128	129	140	+ 9.4%

* Provisional figures.

In the individual countries of the Community, industrial production has increased in varying degrees; it has been most marked in the German Federal Republic, followed by France, the Saar and Luxembourg, in that order. Throughout the member States, the rise in activity is particularly brisk in the industries producing capital goods and durable consumer goods, as for instance in the iron and steel industry, the engineering and electrical industries, and in the building trade. For example, motor-car production in Germany and France for the first quarter of 1955 was up by 35.5% and 23.2% respectively over the same period of the previous year, while the tonnage of ships on the stocks in the main shipbuilding countries of the Community was, on May 31, 1955, decidedly larger than in the previous year, although Great Britain reported a stagnation and the United States a marked downward tendency.

The Steel Market

In the iron and steel industry, demand continues to be lively in spite of a slight falling-off in the monthly volume of new orders for rolled products from 3.5 to roughly 3.3 mill. metric tons in the course of the last six months of 1955. The drop of 200,000 tons is for the most part in respect of orders from third countries, which fell from 19.3% in January to 17.7%. However, this drop would seem to be due mainly to the endeavour made by the works to adjust the acceptance of new orders to their actual production. In spite of this, the overall volume of orders on hand continues to increase; during the first six months of 1955, it rose from 11.7 to 13 mill. metric tons.

During the first six months of 1955, the Community's crude steel production reached a monthly average of 4.3 mill. metric tons, or 25% more than for the first six months of 1954, representing altogether an annual rate of 51.5 mill. metric tons.

Trade in iron and steel products between the Community countries during the first four months of 1955 reached a monthly average of 470,000 metric tons, *i.e.*, 2.7 times as much as during 1952. Almost half of this trade is accounted for by purchases by the German Federal Republic from France and the Saar, Belgium, Luxembourg and the Netherlands. Conversely, deliveries from Belgium and Luxembourg and from the German Federal Republic to the Netherlands have also been increasing. Purchases by Italy and Belgium in the Common Market have almost doubled, and French purchases in other member countries, which, with roughly 2,000 metric tons a month in 1952, had been insignificant, are now amounting to more than 50,000 metric tons a month.

TABLE II.—Crude Steel Production
(annual rates in mill. of metric tons)

	1953 Jan.-June	1953 July-Dec.	1954 Jan.-June	1954 July-Dec.	1955 Jan.-June	Prod. Incr. Jan.-June '55 c.f. Jan.-June '54
Community	41.2	38.1	40.6	47.0	51.5	+26.8%
Gt. Britain..	18.4	17.4	19.4	18.3	20.5	+ 5.8%
United States	105.1	97.4	80.1	80.2	103.8	+29.6%

This brisk exchange of trade within the Common Market has unquestionably been encouraged by the fact that the provisions of the Community Treaty forbid the application of dual pricing which is normally customary in foreign trade, and give every buyer in the Common Market equal access to the common resources. The development of this trade in a boom period which, because a 'buyer's market' exists, normally places the buyer at a disadvantage, shows that the economics have become accustomed to availing themselves of the opportunities offered by the Common Market.

A comparison of the development of prices in the Common Market with that of prices in the world market reveals that the removal of the internal barriers has had a stabilizing effect. The basic prices for steel are perhaps a little higher today than they were during the less favourable economic situation prevailing in 1953, but they have, on the whole, remained close to the moderate level prevailing at the time when the Common Market was first introduced. In Great Britain and the United States, on the other hand, the level of prices went up considerably more steeply during the same period.

The Coal Market

The steeply rising tendency of the demand for fuels as a result, mainly, of the increase in iron and steel production, and of the growing demand from third countries following the general expansion of world economy, is confronting the coal mining industry of the Community with serious problems. During the first six months of 1955, it was possible to raise hard-coal production by 3% over that of last year, whereas American coal production which, on account of its basic natural conditions, is considerably more elastic, increased by 20% during the same period.

TABLE III.—Hard-Coal Production
(annual rate in mill. of metric tons)

	1953 Jan.-June	1953 July-Dec.	1954 Jan.-June	1954 July-Dec.	1955 Jan.-June	Prod. Incr. Jan.-June '55 c.f. Jan.-June '54
Community	237.6	236.3	238.6	244.7	246.0	+ 3.1%
Gt. Britain..	230.6	225.0	233.1	222.6	226.4	− 2.9%
United States	431.3	442.5	353.8	406.7	420.0*	+18.7%

* Estimate.

There is no immediate remedy for this lack of elasticity in European coal supplies, since the creation of new production

capacities is a long-term job. To meet the growing demand, it will be necessary, for the time being, to fall back on imports which come, primarily, from the United States. Imports of American coal which up to the autumn of 1954 were around 500,000 metric tons a month, have gone up to over 1 mill. tons in recent months, and by June 30, 1955, had reached almost the volume of imports for the full year 1954.

TABLE IV.—Hard Coal Imports of the Community
(monthly averages in thousands of metric tons)

	1953 Jan.-June	1953 July-Dec.	1954 Jan.-June	1954 July-Dec.	1955 Jan.-June	Increase Jan.-June '55 c.f. Jan.-June '54
Total imports ..	1,167	1,126	1,143	1,177	1,420	+ 24%
from:						
United States ..	573	539	469	563	873	+ 86%
Gt. Britain	438	405	470	408	349	− 26%
Poland ..	93	106	132	62	70	− 47%
U.S.S.R.	29	44	44	74	95	+116%

The coal deficit of the Community can, for the time being, be made good only by such imports. The maintenance of coal exports from the Community to the other European countries is, however—as distinct from the situation prevailing in Great Britain—looked upon as an economic necessity which cannot be disregarded. The largest coal-producing area of the Community, the Ruhr coalfield, has tried to find an intermediate solution by way of delivering American coal to its own customers. But we must not lose sight of the fact that other sources of energy must be called in to make up for the tonnages of coal of which we are short. The governments responsible for the overall economy of their respective countries have, for this reason, been directing their attention to the problems connected with a common policy on energy.

Under the effects of this economic situation, coal trade in the Common Market reveals a trend which differs from that prevailing in the steel market. Coal deliveries within the Common Market are being concentrated on consumers who are of vital importance to the economy, so that we note a falling-off in exchanges of hard coal, whereas deliveries of coke have increased under the pressure of the sharply rising demand on the part of the iron and steel industry.

During the first six months of 1955, the German Federal Republic supplied some 600,000 metric tons of coal a month to France and Luxembourg, as against an average of 450,000 tons in 1954, whereas German hard-coal deliveries which, in 1954, still amounted to more than 1 mill. tons, have dropped to 800,000 tons a month. These changes are not of an alarming nature, but they clearly show up the problems which will be arising for some time to come.

The Activities of the High Authority

Leaving out of account the establishment of the theoretical conditions essential to the introduction and operation of the Common Market, we find that during the first three years of its existence, the High Authority has intervened in economic affairs with considerable restraint and circumspection. Its tolerant attitude has, as a result, proved of equal benefit to all the member States, as shown by the following examples.

In the coal sector, the High Authority extended the authorization of zone-delivered prices and made further provisional arrangements in respect of the French subsidies before these are to be finally abolished. For the Ruhr coalfield, it has again fixed maximum prices which take account of the rise in costs caused by wage increases. The compensation scheme for the Belgian coal mining industry has been adapted to developments by suitable amendments which make it possible to concentrate the financial assistance granted by the High Authority and the Belgian Government on the marginal enterprises, and to prepare for their integration with the Common Market.

In respect of the iron and steel industry, measures have been taken which will make it easier to safeguard supplies of essential raw materials, especially scrap, on a long-term basis. Out of the compensation fund for imported scrap, which has been in existence since 1953, bonuses are awarded for the increased use of pig iron, whereby the industry's dependence on scrap is to be lessened.

In the transport sector, following the abolition of discriminatory special tariffs, the first step was taken on May 1, 1955, towards the general introduction of international through-rates which, as from that date, came progressively into force for coal and iron ore, and will be introduced for steel and scrap as from May 1, 1956. The High Authority has obtained the necessary directives from the Council of Ministers to enable it to negotiate with third countries, which play an important rôle in connection with the transit of Treaty products, concerning the application of the same rules to transit tariffs.

On July 1, 1955, the rate of the levy on coal and steel production was reduced to 0.7%. As from January 1, 1956, it will be only 0.45%, *i.e.*, half of the rate imposed in the past (0.9%). The President of the High Authority, in a statement to the Common Assembly, expressly declared that the reduction of the rate of the levy would in no way affect the credit standing of the High Authority or the financial conditions essential to the fulfilment of its social obligations.

The financial operations of the High Authority have been supplemented by the conclusion of loans to be used for the construction of workers' houses, for which it has been possible to raise capital funds, over and above the American loan, in member States. The first of the workers' houses forming part of the experimental programme have meanwhile been completed in the Ruhr coalfield and in the French Nord/Pas-de-Calais basin.

Through the active co-operation of the High Authority measures designed to ensure the freedom of movement for workers have been prepared by the Governments of the member States up to the point where the appropriate official regulations can be announced and the European Labour Card introduced in all the countries of the Community. The conclusion of the preliminary studies on the comparison of the real wages of coal mining and iron and steel workers represents an important advance in the social field.

Future Prospects

For the immediate future, the High Authority will be concerned with two tasks arising from its direct responsibility for the coal and steel sectors and from the resolution adopted by the six member States of the Community at the Foreign Ministers' Conference held in Messina on June 3, 1955, concerning the extension of European integration in the economic sphere.

The expansion of the Community for Coal and Steel calls for a number of measures, as mentioned in the statement of the Economic Commission for Europe quoted earlier, which may be summarized as underlying the necessity of bringing the Common Market into full play and establishing it more and more firmly.

The second task, which extends beyond coal and steel, may be described as the necessity of turning experiences and existing patterns to profitable account for establishing a common economic policy for Europe. By its participation in the discussions of experts which opened in Brussels in July, 1955, on the strength of the Messina Resolution, the High Authority has assumed its share of responsibility.

In order to extend the benefits of the Common Market to other economic sectors and progressively create a large, general common market, provision will have to be made for various stages of development and for transitional measures. But on the strength of the experience gained in the coal and steel sectors, one condition would seem to be absolutely indispensable: all parties concerned—governments, producers, dealers, consumers and trade unions—must realize that these various stages and transitions, however long they may be, will irresistibly move us forward and will ultimately end in the complete realization of the objectives set. Only in this way was it possible to set up the Common Market for coal and steel—because there was a Treaty in existence which laid down definite time-limits for the completion of the various stages.

But why are we so concerned with Europe? In reply to this fundamental question, René Mayer, President of the High Authority, declared in Paris on July 25, 1955, 'Unless Europe is built up in the economic sphere, it will not be able to claim that it will continue to exist; nor will it be able to demand recognition. The condition *sine qua non* for co-existence is existence. Above all, we must in all sectors get away from the idea of self-sufficiency. Autarchy has, in the past, always brought us the same result: Insecurity, rivalry and, ultimately war.'

Report on Gas in France

Abstracts from the French Technical Press by 'Ashton'

THE continuation in the May issue of *Journal des Usines à Gaz* of M. Lecutier's paper on the Gas Industry in Algiers (see our issue of August 3, p. 326) goes into technical results, in considerable detail, of the operation of coke ovens at Oran and Alger-Gué. These installations are quite small; nine chambers at Oran and two benches each of six chambers at Alger-Gué, of the 'free expansion' type, 8.95 m. (29 ft.) long by 3.50 m. (11 ft. 6 in.) height by 0.38 m. (1 ft. 3 in.) mean width.

In periods of minimum (summer) demand they are operated at 18 hours carbonizing period to produce hard furnace coke. For the peak (gas) loads of winter the carbonizing period is reduced as low as 13 hours, using a high proportion of gas-making coals with the granulometric mixing of which we have already given details. By varying the combination of coals and gases for heating, the daily output of gas can range from 90 to 290 mill. calories of coal gas. Using different diluting gases, water gas and oil gas, the daily send-out can be expanded from 80,000 cu.m. (say, 2,800,000 cu.ft.) in summer to 200,000 cu.m. (7 mill. cu.ft.). Beyond that, conditioned oil-gas from the catalytic cracking of fuel oil can be added and it does not appear necessary to increase the equipment in carbonizing plant in the future.

Propane/Air

M. J. Tonnelier describes a small prototype automatic propane/air mixing plant installed at Villers-Cotterets supplying a district with 500 consumers. In this plant there are two mixers (tuyères) into which propane from the pressure vessels is fed through reducing valves regulated between 0.7 and 2 atmospheres. Air is drawn in through filters and a mercury sealed equilibrium valve. Between the propane feed and the mixers are valves operated by a rising and falling gasholder of small capacity (3 cu. m., say 100 cu.ft.). The mixers are proportioned so that one is equal to the minimum demand of the distribution system; the other is equal to the difference between the peak load and the minimum demand. The gasholder is connected by a single inlet and outlet pipe to the line between the mixers and the governor to the district. When the holder comes down it opens the valve to the first mixer. If the output of this is insufficient for the demand the holder continues to descend and opens the valve to the second mixer. The holder then re-fills and rising closes both valves to the mixers. The gasholder is sealed in an oil-tank and its capacity is chosen so that the rhythm of rise and fall is about 10 cycles per hour. Actually it is calculated that 2 cu. m. would suffice but prudence dictates the more liberal figure of 3 cu. m. The arrangement is shown schematically in Fig. 1, here reproduced. For larger plants three or more mixed (tuyères) may be employed.

Gas at the Paris Fair

The President of the Committee of Direction of the Paris Fair asks, says the Editor of *Journal des Usines à Gaz* (June), whether this has not now become a great international event. That of 1955 assumed record proportions. More than 46 nations were represented at the Fair. The flag of the U.S.A. floated for the first time on one of the buildings and there was even question at one time of an effective participation by Russia. Some figures are impressive: 300,000 sq. m. (2.15 mill. sq. ft.) of exhibition floor space, nearly 5,000 tonnes of material exhibited and nearly four million visitors.

As was right and proper, Gaz de France played its usual part with two pavilions in the same situation as last year, set out to illustrate the important rôle of gas in the increase of industrial production and the modernization of the home. The pavilion of Domestic Application, a veritable house of glass, full of appliances in demonstration, bore the formula: 'Gas for the Century of Speed and Comfort.' That of Industrial Applications developed the same theme, presenting, in operation, some well-chosen installations, among them a complete series of cleaning, painting and drying metallic objects, an example suggestive of the rapidity and perfection of execution obtained by the use of gas, a few minutes sufficing for the completion of the whole operation.

Conference on Heating, Ventilation and Air Conditioning

The first paper on Central Heating in 'Economic Dwellings' was presented by M. Cadiergues, Director of the Scientific and Technical Committee of Heating and Ventilation. It dealt with French practice and concerned particularly groups of 300 to 2,500 dwellings. After dealing with the importance of insulation the author went on to the different methods of heating. Individual heating with coal stoves is relatively cheap, but when rooms are not heated condensation in cold weather can be disastrous. Collective heating by means of hot water radiators or heated air, is only economical if there is some system of measuring the heat. According to circumstances there are advantages in central heating on a unit building basis or per group of buildings.

Belgian practice was described by M. A. de Grave, who said that in 1945 most moderate-sized houses had no central heating. Since the war, practice had favoured the construction

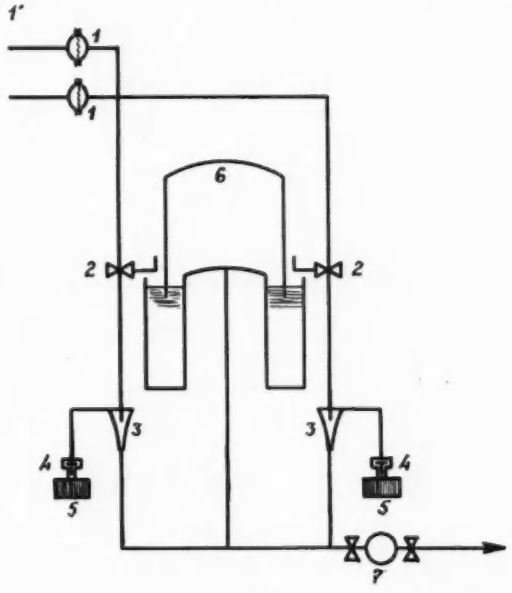

Fig. 1.

1. *Reducing valve*
2. *Balanced flap valve*
3. *Tuyère—mixer*
4. *Mercury-sealed equilibrium valve*
5. *Regulating air filter*
6. *Gasholder*
7. *District governor*

of collective housing, flats in several storeys, where central heating is usual, almost always by hot water 'radiators,' often with pump circulation. Heating by radiation is counted a luxury; heating by hot air under pressure often raises objections, draughts (strongly objected to by Belgians), noise of fans, high cost of electricity for power. In State dwellings coal is generally used, but in the boilers of privately-owned blocks of flats the burners are gas-oil or light fuel oil. District heating is assuming importance. There is room for development in central heating in Belgium if methods of prefabrication are developed with mass production at low costs.

Dr. Fr. Raedler of the Institute Max von Peterhofer treated German Practice. He showed the considerable economies to be achieved by insulation. He then described the Domotherme method in which heat produced by hot water is distributed in heated air. In the hall of each dwelling a heat-interchanger is installed and the hot air is distributed to the neighbouring flats by a fan. Costs of installation are of the same order as

those of conventional systems but economies in running may amount to 40%. Central heating by convectors is also interesting but the heating surfaces need very frequent cleaning to prevent the accumulation of dust.

Mr. J. B. Dick, of the British Building Research Station, reviewed Researches in Domestic Heating and Ventilation in Great Britain. After the war, he said, mainly semi-detached houses were built, but today the construction of blocks of flats is being developed in the towns. Research had dealt with insulation, comparisons of the different methods of heating, air-conditioning, and metering of heat. The possibility of 'Unitary conduits' is envisaged.

Developments in Urban Heating in Austria were described by Dr. H. Kloiber. The most important example of district heating is that at Klagenfurt, which has been in operation since 1949. Pulverized coal is used in boilers producing electricity and hot water. The sale of electricity produces one-third of the total receipts. There are two installations in Vienna, one serving a series of public buildings, the other a number of industries and a group of dwellings. Another installation is under construction at Salzburg.

Herr Karl Bormann described developments of district heating in Germany. There are now 42 urban heating plants, 140 'distant' systems heating groups of dwellings and 12 district heating schemes in Eastern Germany. There are generally municipal undertakings distributing both electricity and hot water between 110° and 185°C. Three examples were described, distributing steam at Munich, hot water at Berlin, Charlottenberg and steam for industrial purposes at Hamburg.

Mr. P. Janssen, Engineer to the Sulzer Company, contributed notes on some new installations for heat distribution in Switzerland. An installation at Berne is in the form of an incinerator of night soil of which 200 tonnes per day is consumed and a part of the steam produced at 10 kg. per sq. cm. (140 lb. per sq. in.) is delivered to two industrial consumers while the major portion is distributed as hot water at 175°C., there is no production of electricity. At Zurich, the 'Centrale' of the Federal Polytechnic School feeds systems of water at 130°C. (for air-conditioning, sanitary purposes and steam-water interchangers), hot water at 70°C. (for radiators), and steam (for sterilization, kitchens, laboratories). A heat-pump may ultimately be connected to this installation.

M. M. Salmon-Legagneur, Director-General of the Cie Parisienne de Chauffage Urbain, described developments in Paris. The distribution system in Paris is today fed from a plant at Bercy, the electricity station at Ivry and a destructor plant at Ivry. The system is supplied with steam which varies in pressure from 5 to 20 kg. per sq. cm. (70-280 lb. per sq. in.). It extends over 10 Parisian 'wards' and the commune of Ivry, with a total length of mains 40 kilometres (say 25 miles) and serves about 700 buildings. Two further central stations are contemplated. Metering is usually by condensed water to each building. Experience and results with installations outside Paris were discussed by M. R. Fisch, those at Chambéry, Mâcon, in Villeurbanne. He was of the opinion that this form of heat service should be the most economical of all and give the maximum of comfort and many other advantages.

M. A. Fournol, Chief Engineer to the Scientific and Technical Building Centre, presented results of research particularly into the problem of thermal insulation and the fixing of minimum conditions to be inserted into Standards of Insulation. He described a test room which has been constructed at Champs-sur-Marne, where five tests have now been carried out on walls built in as many different materials.

M. J. C. Marichal, Engineer to the Research Centre for Buildings and Public Works, discussed limiting temperatures in heating by the floor and by the soil. Results of tests on 31 subjects showed there was no complaint when ambient temperature at the level of the feet lay between 18.5° and 21°C. Missenard gives the condition of comfort for the feet; 0.62 t plus 0.38 T = 21.2°C., where t is the temperature of the air and T that of the ground.

Purchase Tax on Gas

A decree of April 30 makes important modifications. The municipal tax is suppressed, together with the departmental tax from July 1. The tax on transactions and the local tax additional to the taxes on business arrangements, which amounted to 1.8% and 3.2% respectively, are also suppressed. On the other hand, a local tax varying from 2.2% to 2.75% is introduced. Some modifications, generally more precise definitions, are decreed in the exemptions from the nationalisation law of certain industrial gases (blast furnace gas crude unpurified gas, and ethylene mixture) not intended for public distribution.

Gas Week 1955

Organized by the Association Technique du Gaz, the Gas Week was held from April 26 to 29, at the 'House of Chemistry,' Paris. The conference was opened by M. Le Guellec, President of the Administrative Council of Gaz de France. In his address he remarked upon the changes brought about by the nation-wide integration of gas administration and those incidental to technical developments in the industry.

Papers presented covered the evolution of the oil refinery industry in France, standardization in the gas industry, modern processes for purifying feed water to low pressure boilers, new applications of industrial gas, cathodic protection of mains and services, the problem of stocks (of materials and appliances), statistical analysis and 'econometry' in the gas industry and relations with domestic consumers.

Coal-fed Producers

M. Paul Heurtey lectured on June 3 to members of the Sté Ingénieurs Civils de France and the French Society of Metallurgy on the theory of the pre-distillation producer and described an installation which has been in operation for more than a year at the Creusot. It consists of a producer of 3.20 m. (say, 10 ft. 6 in.) dia. capable of gasifying 30 to 100 tonnes per 24 hours and generating a gas of an average c.v. 1,850 cal. per cu.m. (195 B.Th.U. per cu.ft.). The composition of the gas averages 4.8% CO_2, 0.4% Hn, 0.1% O_2, 26.4% CO, 20.9% H_2, 2% CH_4, 1% C_2H_4, 44.4% N_2. It is fully automatic. It uses the 'flambant sec' (low volatile bituminous) coals which are mined particularly in Lorraine. A thermal efficiency of cold gas of 91.3% is claimed and recovery of some waste heat would raise this to about 95%.

Coal Stocks

A note on the present position of the coal market in Europe in the June issue of *Journal des Usines à Gaz* remarks that the situation is good for producers. The demand, which has notably increased since last autumn, is due to industrial progress and insufficient coal production in Britain. In Germany, Belgium and Holland the mines have practically cleared their stocks, and supplies to home industries are rendered difficult by exportation to England and the Scandinavian countries. German gasworks are complaining of insignificant coal stocks (some days only), lower than those known in the most critical periods of the war. The situation of coal sales in France is healthy but thanks only to precarious outlets due to exports to Britain and Scandinavia in substitution for British coals. Stocks of Gaz de France are normal, 410,000 tonnes or 40 days supply, of Electricité de France 10% below normal at 727,000 tonnes for a daily consumption of 10,800 tonnes. Some increases of price for coals and coke are approved by the High Authority, particularly from German sources.

French Technical Terms

We referred in our abstracts of March 30, p. 848, to the committee set up to standardize the forms of French technical terms imported from other languages, mostly Anglo-Saxon. A number of decisions are reported in *Chimie et Industrie* for April. Among these are some of interest to gas engineers. 'Cracking, to crack,' is to be translated by 'craquage, craquer'; 'feeder,' meaning a line of transmission direct from emission to centre of distribution without feeding intermediate points, by 'artère,' or 'conduite' or 'canalisation de transport'; 'fuel oil' by 'fuel'; 'gas oil' by 'gazole'; 'reforming' by 'reformage' in the oil industry, 'conversion' in the gas industry; 'scrubber' by 'tour de lavage'; 'steaming' by 'injection de vapeur.'

Annual Congress

The 72nd Annual Congress of the Association Technique was held at Strasbourg from 27th June to 3rd July. The titles of 28 papers are published but abstracts are not yet available. Five of them deal with oil cracking or the distribution of propane, two with natural gas and two with gum problems.

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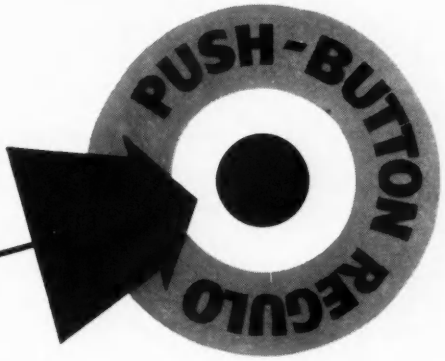

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Sulphate of Ammonia Production on Tyneside*

By J. T. LEWIS, Assoc.M.Inst.Gas E. †

THE three types of sulphate of ammonia plant in use today are (a) direct, (b) semi-direct, (c) indirect. The first two differ from the last in that all or part of the ammonia is recovered direct as the sulphate, whereas in the indirect system all the ammonia is primarily recovered in a solution of its salts which require distillation to free the ammonia. Normally the direct and semi-direct systems are restricted to coke ovens where the load is constant as they do not lend themselves to the degree of flexibility required on a gasworks—where the liquor can be stored and the plant worked when convenient. The cost of provision of ammonia washers and underground storage wells are the big disadvantages of the indirect system.

The Indirect Plant

The two plants in the Tyneside Division of the Northern Gas Board at Redheugh and Howdon, are indirect and are almost identical in construction. They consist of two stills (free and fixed ammonia), a saturator, a receiver for the salt and mother liquor which can be used as a neutralizer, a centrifugal dryer to remove the adherent liquor, a dryer to completely dry the crystals, heat exchangers (waste gas/crude liquor) and a waste-gas cooler.

The crude liquor is pumped via the heat exchangers in the free still (80°C.) where the ammonia, hydrogen sulphide, carbon dioxide and the hydrogen cyanide are liberated by steam distillation. The still contains trays with crocodile hoods and the liquor descends to the bottom liming chamber. If liming is practised, the milk of lime—prepared externally—is pumped into the chamber where it is thoroughly mixed by passing under a curtain, up the other side and then into the fixed still where the steam drives off the remainder of the fixed ammonia. The diagram given on p. 568 shows that it is this ammonia and steam which is carried back to the free still which actually distils off the free ammonia. The spent liquor runs via a seal pot (15 ft.) to the settling tanks—which remove tar and lime sediment—through a coke filter, and to the drain. The waste gases passing from the saturator, leave any acid liquor spray behind in the catch pot and they are drawn through the heat exchangers and waste gas coolers to join the coal gas stream on the inlet side of the exhauster. A fan was originally provided to augment the exhauster pull but was found unnecessary as the exhauster pull was sufficient even though the plant was approximately 200 yards from the exhausters.

Method of Operation

The ammonia and other gases evolved from the still during distillation are carried to the bottom of the saturator and evenly distributed by the cracker pipe. This pipe is of lead and is approximately 6 in. in diameter in the shape of two semi-circles forming the complete circumference; at regular intervals (4 in.) there are nozzles through which the gases pass into the solution of sulphate of ammonia containing 3 to 4% sulphuric acid. The crystals are formed and allowed to grow, the whole mass being kept in a state of suspension by means of a steam agitator coil housed in the boot of the saturator. The sulphuric acid supply is fed in continuously to replace that absorbed by the ammonia so that the acidity remains constant. The salt formed gradually accumulates and is drawn off at regular intervals (normally approximately 10 cwt. every two hours) by a steam discharger, the salt and mother liquor being received in the neutralizer where the excess acid can be neutralized at this point. The salt is then ready for its primary drying, carried out as usual in a centrifuge, with the salt contained in a stainless steel basket, containing $3\frac{3}{32}$ in. holes to allow the passage of the surplus liquor. It should be mentioned in passing that these baskets have been in use for 2 to 3 years and not even minor repairs have as yet been necessary. The salt is then removed from the basket by allowing the centrifuge to rotate slowly against a hand-operated plough fitted with a renewable 'Tufnol' tip. This cuts the salt and drops it into the change pot below to enter the final drying stage. Here the damp salt is fed by a turntable to the bottom of a 5 in. rubber lift pipe where it is blown by a blast of hot air (100°C. at 30 in. W.G.) to the top of the dryer. In descending the dryer, which contains louvres, it comes into contact with a secondary stream of hot air flowing counter-current; this air completes the drying, the salt falling into the bagging hopper at the base. The excess air is blown to waste outside the building, and as it tends to carry any dust forward it passes through a water seal where the dust is deposited. This water is periodically drained off into the mother liquor tank so that nothing is wasted. The flash dryer, apart from the renewal of turntable blades, has given little trouble and has the advantage of dispensing with a conveyor, the air acting as the conveying medium thus avoiding the usual rough handling of the crystals.

During the 3 years' operation of the plants no doping of the saturator has been necessary as the crystal size and structure have been satisfactory. On two occasions the length/breadth ratio of the crystal increased to 4 to 5/1 and was attributed to the higher alumina content of the acid supplied. The matter was not pursued as the crystals soon assumed their original shape on resumption of normal acid supplies.

Desaturation

After several days' working, deposits of rock salt appear as growths on the saturator walls and around the cracker pipe, and these are removed by desaturation. This consists, simply, of stopping production, emptying out from the saturator as much mother liquor as possible into the adjacent mother liquor tank, refilling with water and allowing the steam from the still and coil to dissolve the hard salt. Originally this operation was scheduled for every 3 to 4 days but now that the operators are well trained it has been found better to allow the plant to run 5 to 6 days between desaturations, since, in most cases, the best crystals are not obtained until the third day. In fact, no hard and fast rule is laid down for desaturation, and where possible it is made to coincide with the availability of labour to carry out such repairs to the plant as are not possible with the plant working. One other operational improvement is that the saturator, after being on the boil for three hours, is emptied and refilled with water plus 6 to 8% H_2SO_4, so that a good clean-out is ensured. This possibly accounts for the plant being able to last longer between desaturations.

Neutralization

The finished product must contain less than 0.025% free H_2SO_4, and as the working acidity of the bath is normally 3 to 4% this acidity must be removed. Several methods are available and of these, three have been tried.

(1) Neutralizing by Still Gases

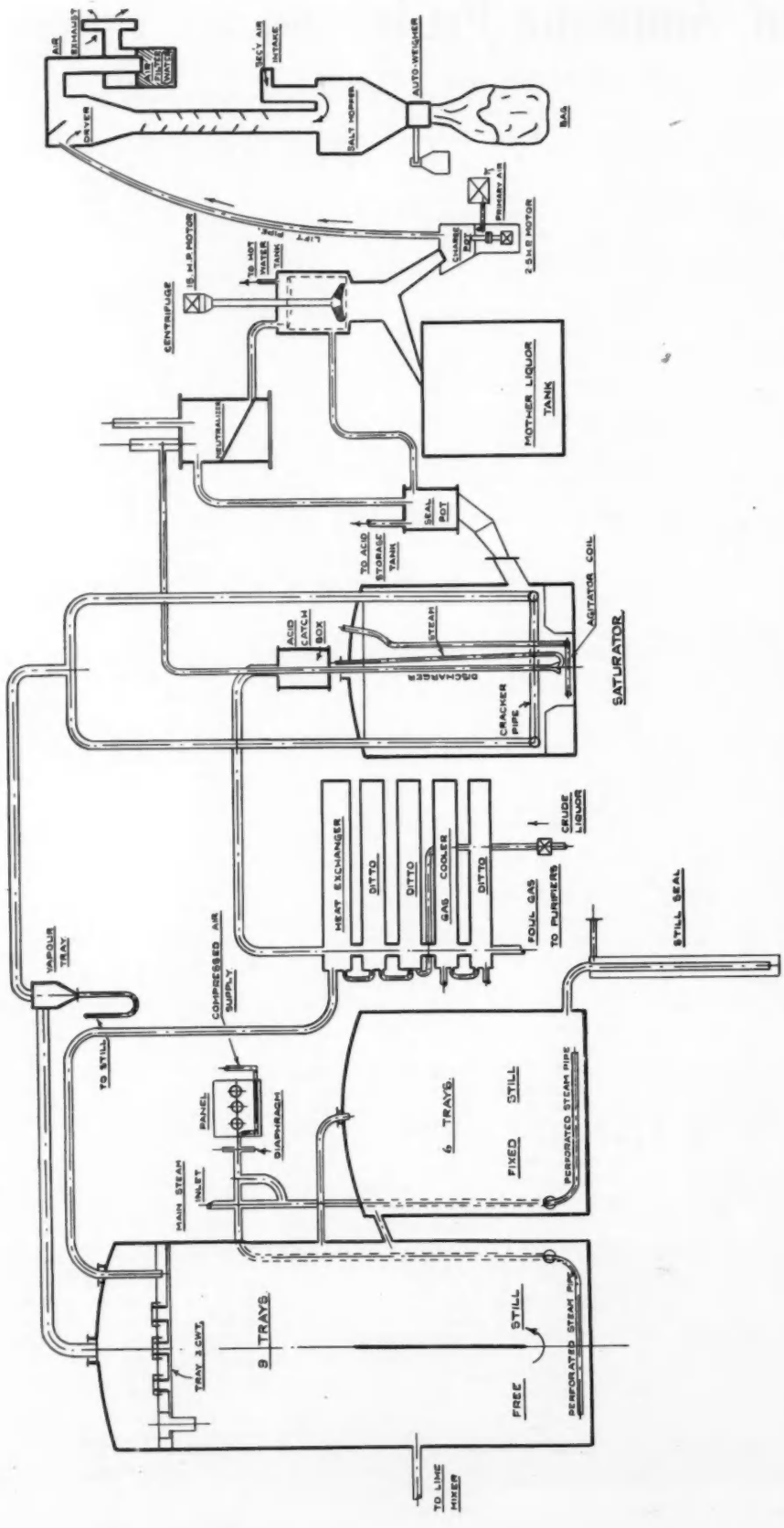
Part of the still gases are drawn off by a steam ejector and passed through the neutralizer to neutralize the excess acid. This system has the advantage of requiring no additional cost for neutralizing. It can be worked satisfactorily but has the following disadvantages:—

(a) Although the ammonia is absorbed by the acid, the carbon dioxide and the hydrogen sulphide pass through the solution and cannot be discharged to atmosphere. They must therefore be incorporated in the waste-gas line for subsequent purification. This often causes trouble as the pressure must be governed to suit the conditions of the waste gas leaving the saturator; special precautions are, therefore, necessary. On the Howdon Plant these gases cannot be drawn into the waste-gas line as it is under pressure at the inlet to the heat exchangers, there being no suction until the outlet coolers when the steam has been condensed.

(b) Contained in the neutralizer are several gallons of acid mother liquor which must be neutralized as well as the salt, and although no waste is incurred this takes valuable time.

* From a paper presented to the Northern Junior Gas Association in March of this year.

† Howdon works, Tyneside Division, Northern Gas Board.



6 TON PER DAY SULPHATE OF AMMONIA PLANT.

HOWDON GAS WORKS.

(c) As the salt and liquor must be neutralized, it follows that when this process is almost complete the acidity will be insufficient to completely absorb all the ammonia and that there must, consequently, be a considerable 'slip' of ammonia. This ammonia, when passing through the heat exchangers and coolers with a relatively high percentage of carbon dioxide and hydrogen sulphide, will reform the carbonate and sulphide and block the vessels.

(2) *Neutralizing by Concentrated Ammonia*

Pure ammonia (33%) from an auxiliary tank, is fed through a needle valve, vapourized in a steam heater and drawn into the inlet side of the primary air fan so that the drying and neutralizing are carried out simultaneously. This method has the advantage that the neutralizing process is uncontaminated by hydrogen sulphide and other gases. However, the author found the following disadvantages:—

(a) The time contact in the rubber tube is too short and an excess to the theoretical amount of ammonia is required to ensure neutral salt. This excess cannot be absorbed in the ½ in. washer seal and is therefore blown to waste.

(b) The feed to the dryer is governed by a turntable in the base of the change pot and to ensure efficient neutralization this feed should be constant to coincide with a constant flow of concentrated ammonia. Unfortunately the feed varies, so that, should it fall off, there will be further wastage of ammonia, and if the feed increases, the salt will not be neutralized.

(c) The cost of pure ammonia is 28s. 5d. per cwt.

(3) *Neutralizing by Water Washing*

The sulphate produced is grade 1 and the crystals rough, normally with a length to breadth ratio of 2 to 3/1. It was, therefore, decided to attempt to remove the acidity by washing in the centrifuge, provided the amount of water necessary was not too great, as this water is returned direct to the saturator. In the first attempts, tepid water was used and the salt was neutralized, but apart from using too much water, it had the disadvantage of cooling the salt and thereby placing an extra strain on the dryer by feeding the salt at a much lower temperature.

The normal washing water is fed from an overhead tank supplied from the plant steam traps but with a small make-up of cold water. A small open steam pipe (¾ in.) was inserted in this tank from the 15 lb. steam line and an occasional trickle of live steam is sufficient to keep this water at the desired temperature, 60° to 70°C. The net result is that now the salt is neutralized with less water and the whizzed salt enters the drying stage several degrees warmer. Had this water wash been insufficient for neutralization the next step would have been to wash the salt with crude liquor, but up to now this has not been necessary. Preliminary tests with crude liquor were carried out with satisfactory results, the only disadvantage being the slight discomfort of the operator due to the evolution of ammonia and hydrogen sulphide during the neutralizing. This method of water washing, adopted six months ago on the Howdon plant has proved satisfactory, and approximately 6 to 7 gal. of water are used upon each batch.

Steam Supplies

Steam can be admitted to either the free or the fixed still through perforated pipes 2 in. in diameter lying horizontally across the bottom of each still, and may be controlled by hand or automatically by a diaphragm valve. This diaphragm valve is actuated by compressed air and controlled by a gauge on the operating platform registering the temperatures of the still head gases. The instrument is set to a predetermined figure (approximately 100°C.) and the steam supply is regulated to keep it constant, *i.e.*, opening when the temperature starts to fall and *vice versa*. On normal working this operates very satisfactorily, the only trouble being the corrosion of the thermocouple inserted in the still head which corrosion causes inaccurate reading and erratic performance of the crude liquor supply pump, tending to make the steam supply regulation too erratic. This is particularly noticeable on the Howdon plant where the pump picks up direct from the underground liquor well and has not, therefore, a flooded suction. The Redheugh plant is almost free from this trouble having an overhead liquor supply tank fed by an independent pump. A relatively low steam pressure is sufficient for the distillation process and at Howdon comes from the 15 lb. per sq. in. work's supply line which contains the pass-out steam from the turbo alternator, exhausters and booster. This steam is relatively cheap, most of it having originally been generated in waste-heat boilers and having already produced either electrical or mechanical energy. At Redheugh the steam is fed from the main work's supply and passed through a suitable reducing valve to bring it to 15 lb. per sq. in. On both works, however, 80 to 100 lb. per sq. in. steam is supplied to the saturator for the salt discharger and the agitator coil, though in the latter case it is checked at the valve to give a pressure of 12 to 20 lb. per sq in. on the coil, this pressure being enough to give the desired agitation and the best found from experience. The steam supply agitator coil and discharger pressures are recorded on the operating platform, and from the charts the time and duration of lifting each batch can be seen, as well as the number of tests taken by the operator. As the liquor and steam flows are also recorded it can be seen that 'rule of thumb' practice on sulphate plants is a thing of the past.

Corrosion and Erosion

No trouble has been experienced from corrosion in the crude liquor lines, the stills, or the heat exchangers and coolers. The latter, made in stainless steel, have stood up very well, although each sulphate plant has its own individual problems and materials satisfactory for one may not prove satisfactory for the other—probably due to the different constituents in the liquor. In the case of stainless steel the corrosion resistant properties are stated to be due to a thin film of chromium oxide only a few molecules thick, and it has been recommended that a small quantity of air added to the waste gases will maintain the oxide film. In the meantime, to assist this oxide formation whenever possible, *i.e.*, when the plant is off for repairs, the waste gas line is allowed to draw in air for a short while, so as to leave the heat exchangers standing with a relatively high cencentration of air in the tubes and vessels. In most cases of failure in stainless steel pipes, bends, etc. (in other parts of the plant) the fault has always been located in the weld. It has been suggested that a final polish on the weld to bring it to the same degree of brightness as the pipe metal would obviate this trouble.

Most of the corrosion has been centred in the saturator, although the vessel itself, constructed in mild steel, lead lined and tiled, has required no repair. However, the flange connecting the saturator to the seal pot has needed attention. Two new bottom inner lead sleeves have been fitted, but apart from the job of dismantling and lifting an unwieldy sealpot, has presented no difficulty. Unfortunately the lead covering inside the upper half of the flange has been a source of trouble recently since this covering, which extends to the top of the sealpot, had perished near the flange. This necessitated the removal of the acid-resisting tiles, repairing the lead and then resetting the tiles as well as possible. However, the repair cannot be taken as satisfactory and on the receipt of new tiles a more permanent repair will be made. On the Redheugh plant this sealpot is constructed in Monel metal, but it has required more frequent repairs, and as the Howdon plant was constructed after Redheugh it can be assumed that the change in sealpot construction favours lead lining and tiles.

Contained in the saturator are the cracker pipes, steam agitator coil and discharger which are subject to the corrosion effects of hot (108°C.) saturated solution of sulphate of ammonia with approximately 3 to 4% H_2SO_4 in the bottom and waste gases, the erosive properties of the steam and upwards of 10 cwt. of rough crystals in a state of suspension. Two dischargers are available and while one is in use the other is being repaired, though normally it is only a case of putting on another 'coat of lead' and making minor repairs to the steam supply pipe. After two and a half years of operation on the Howdon plant the first pinholes were found on the discharger foot, which is cast in phosphor bronze. The first cracker pipes were constructed in 6 in. dia. lead and contained 48, ½ in. ceramic nozzles which gradually became enlarged and dropped out leaving a hole of approximately 1¼ in. dia. in the cracker pipe. This upset the even distribution of the still gases. The first nozzle came out after one year's work but the cracker pipe was made serviceable for another year by simply plugging the gaps with lead and drilling ½ in. dia. holes where necessary. The new cracker pipes are fitted with complex nickel-chromium alloy nozzles which are expected to give

several years' wear. To experiment one stage further, the old cracker pipes, which looked ready for the scrap heap, have been repaired and are ready for use, and in this case the complete inner ring has been made up with antimonial lead (harder than normal) and ½ in. dia. holes drilled in instead of nozzles. The decision to improvise in this manner was affected in no small way by the cost of new cracker pipes—£187. As the repaired cracker pipe cost £36, it will be interesting to compare the results in later years.

The original agitator steam coil in the boot of the saturator was made of lead, also fitted with ceramic nozzles but had an even shorter life than those in the cracker pipe. The nozzles fell out and the lead disappeared leaving holes 2 to 3 in. in length around the coil. In this case the failure appeared to be due to the erosive action of the steam and the crystals. It was therefore decided to discontinue the use of ceramic nozzles for the coil, and in the intervening period a plain lead coil with ⅛ in. dia. holes was used and, although far from satisfactory, lasted at least as long as the former. The acid-resisting properties of K Monel suggested its use for nozzles, and two coils were prepared with these nozzles fitted ⅛ in. proud to prevent the cavitation effect of the steam. However, the coils, although giving approximately 15 to 20% longer life, were not satisfactory as the nozzles also came out leaving enlarged holes. Part of the blame for this was due to the fact that the nozzles were simply pieces cut from a length of ⅛ in. bore K Monel tube and, therefore, had no projecting flange to assist in securing them. The nozzles themselves showed little signs of wear.

The next step was to scrap the lead completely as this appeared to be the weak link, and as copper appeared to stand up to the saturator conditions well, it was decided to make a copper coil of similar dimensions, to drill ⅛ in. holes and homogeneously cover with lead. This showed a decided improvement, and on removing the coil from the saturator (after 30% longer life than its predecessors) it was found to be almost unaffected apart from a little erosion of the lead covering. The only weakness lay in the joint where the lead downcomer joined the copper coil, and its failure was due more to structural weakness than anything else. Consequently the coil now in use is copper with a 12 in. dia. copper standpipe so that the copper/lead joint can be made structurally sound. Should this prove unsatisfactory the failure may then be due to electro-chemical reaction between the lead and the copper, which will necessitate further investigation. One further attempt to solve this problem has been the fabrication of the complete coil and downcomer in K Monel tubing (1½ in. dia.) at a cost very little in excess of the lead coil. This, it is hoped, will give a longer life when brought into service in the future.

Loading of Sulphate

The arrangements on both plants are for bag loading as the dried sulphate drops into the hopper, with a semi-automatic weighing and bagging machine. During the summer months, however, orders for bags of sulphate are hard to come by and it was decided to load in bulk. The advantages for bulk loading are that no bags are required; consequently, no sewing of bags is necessary, and so labour requirements are reduced. The disadvantages are (a) a covered loading dock is essential as the salt is being continually filled direct from production; (b) the wagons are liable to incur demurrage on a small plant, especially during breakdowns; and (c) capital outlay for the conveyors, and the maintenance of these. Furthermore, on small plants the operational staff consists of two men—the top man who controls the salt production in the saturator, and the bottom man who is his assistant, and even if bulk loading is carried out, the reduction in the bottom operator's work does not warrant it being classed as a one man plant. There appears to be no saving from the point of view of bag costs as the cost of the bagged sulphate to the buyer is simply the cost of the salt plus the cost of the bags. In the opinion of the author, bulk loading is very suitable for the larger plant on continuous operation but for intermittent small plants bagging is more satisfactory.

Economics of Production

The overall cost of sulphate of ammonia produced in the Tyneside Division during 1954 was 251s. 6d. per ton; the capital charges and depreciation amounted to 38s., making a total of 289s. 6d. per ton of sulphate produced. Over the same period the selling price was 294s. 6d. (excluding bags) so that a profit of 5s. per ton was made. Without attempting to itemize all the various costs it is useful to mention the following:—

(a) The labour costs amount to 37s. per ton, a comparatively high cost due to the plants requiring two operators. It can be seen that for double the production no extra manpower is necessary so that the labour charges per ton of sulphate produced would be automatically halved.

(b) The sulphuric acid charge of 160s. represents just under the 'ton per ton' normally accepted for acid consumption.

(c) Approximately 19 lb. of sulphate were produced per ton of coal carbonized, by free ammonia recovery. Liming is not practised on either plant, it being generally considered to be uneconomic, as the liquors are not particularly high in fixed ammonia content, and the cost of lime plus the attendant lime sludge troubles do not warrant its use.

(d) The Grade 1 bonus of 6s. per ton did not come into effect until July 1, 1954, so that price includes the old bonus of 3s. per ton. It also includes a bonus of 3s. 4d. per ton in as much as there is an allowance of 8d. per ton for every 0.1% nitrogen above 20.6% and the average nitrogen content is between 21.1% and 21.2%.

Conclusion

The production of sulphate of ammonia can rarely be classed as an economic proposition. On the larger works, with up-to-date plant and adequate supervision, it can at least pay its way. The future of this product is tied up with world markets, but in the meantime, by producing fertilizer, providing work and reducing the toxicity of its effluent, the gas industry is, at least, making a contribution to greater efficiency.

BRITISH WOOD PRESERVING ASSOCIATION

The British Wood Preserving Association has attained its Silver Jubilee this year, and its Annual Convention, held at Cambridge a few weeks after the railway strike, was an occasion for congratulation to the President, Secretary, and members of the Convention Committee on the excellent arrangements for the accommodation of delegates and their guests. The outlook was grim only a fortnight before the Convention, and there was cause for gratification that very few cancellations were received, so that a total of over 200 members and guests attended. None of the overseas visitors was discouraged by our transport disruptions, and every year the number of these visitors increases. If the popularity of the Convention increases it looks like becoming one of the great international events of the year.

The papers were again well chosen, and as Mr. S. A. Richardson said in his summary at the closing session, they provided something of interest for every branch and twig of the timber preserving industry, including the users of the treated timber.

Of principal interest to the gas industry, which provides a large proportion of the creosote employed in preserving wood, was the paper on 'Pressure Creosoting and the Requirements for Treating Practice' by Mr. Philip Grindell, of Burt, Boulton & Haywood, Ltd. Reviewing the paper, Mr. Richardson said it was interesting to learn 'how the other half lives,' and to those who were not directly connected with the creosote section of the industry Mr. Grindell's paper was of great interest. How much more interesting it was to those engaged in pressure treatment of timber was brought out in the discussion which was so well handled by Mr. Grindell. 'I think we will find in another year or so,' said Mr. Richardson, 'that the Convention records will form the finest encyclopædia of timber preservation in existence, and papers such as Mr. Grindell's will give to them a text-book value. The possibility of setting examinations on timber preservation and issuing diplomas of competence has been under consideration by a sub-committee for some time, and a syllabus has been discussed. One problem to be overcome is making academic facilities available to students of timber preservation and another is relevant reading matter and text books. Papers such as that presented by Mr. Grindell greatly assist in resolving these problems.

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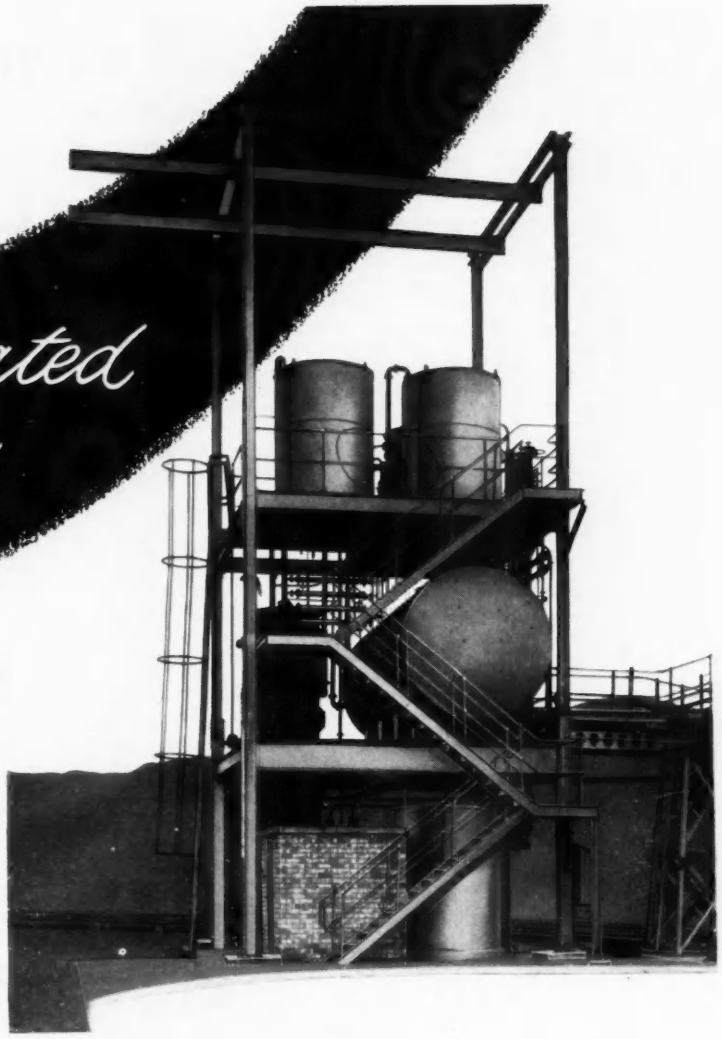

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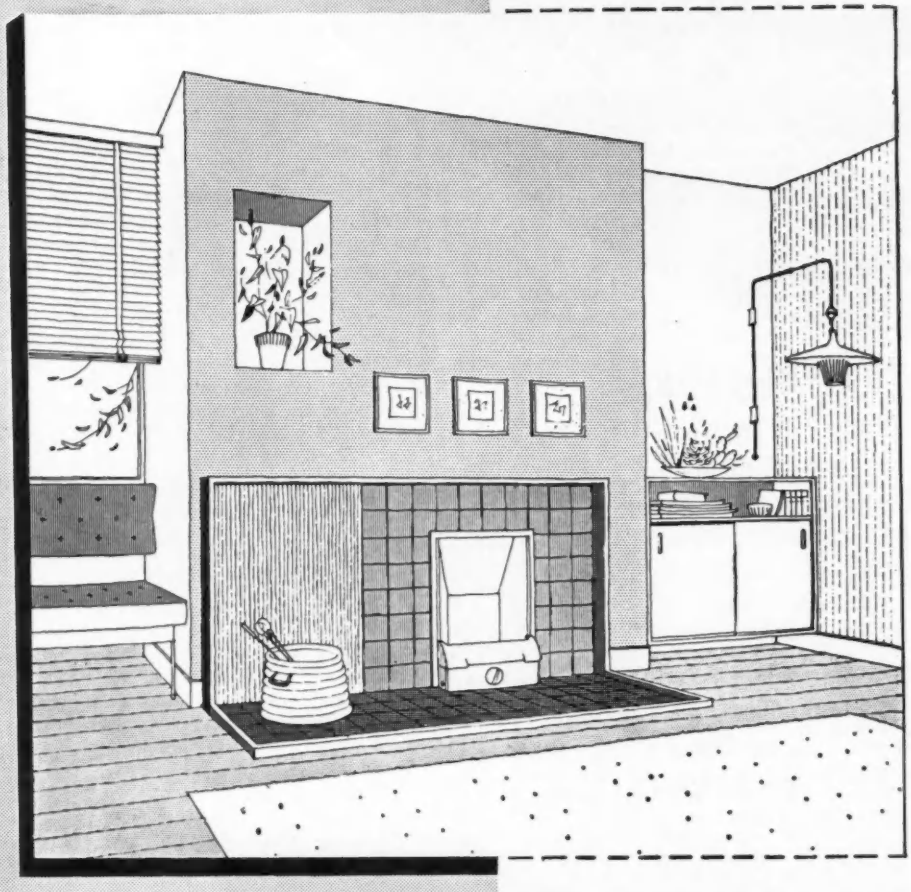
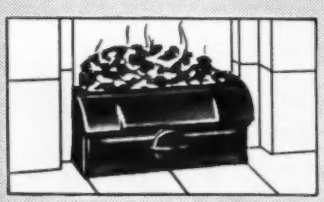
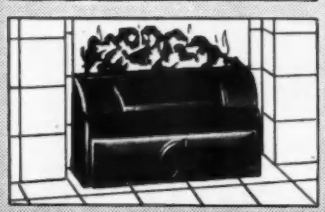




Standard



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The standard extension piece looks elegant during the day and, at night, when in raised position for overnight burning, it acts as a safety device by preventing live fuel from falling out on to the floor.

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For full details of the No. 25 Lowburn fire, write to the Housing Division of:—

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Another Penny on North Thames' Gas

An increase in the price of gas of 1d. f r every therm sold at the flate rate was nounced last Friday by Mr. Michael ilne-Watson, Chairman of the North ames Gas Board, at a meeting of the orth Thames Gas Consultative Council. e increase would affect everyone of e Board's 1,800,000 consumers.

Mr. Milne-Watson was introduced to e Council by its chairman, Councillor dwin Bayliss. Mr. Bayliss apologized the Council for having had to call a ecial meeting in August. It had been e intention of the Council that it should ot meet until the first of September, but e recent rises in the price of coal had ade an earlier meeting essential.

Mr. Milne-Watson too apologized for the necessity of holding a meeting in August. He reminded the Council that when they had last met in May he had warned them that if there were to be an increase in the price of coal the Board would not be able to bear the cost of it. Regrettably, there had been such an increase, and from July 18 the Board would have to pay another 12s. 6d. a ton for coal. He said that this was the largest single price increase in coal that had ever been experienced, and in a full year it would cost the Board over £3 mill. He said that in company with other boards they had countered the increase to some extent by an increase in the price of coke, but even that would not cover the extra cost of coal. It would therefore be necessary to increase the price of gas.

Effecting Economies

Mr. Milne-Watson said that the Council must not think that the Board was not doing all it could to meet these increased costs by effecting economies and reviewing the administration. He said that that would be quite untrue for the Board was doing all it could. For example, he said, in the last 18 months two uneconomic gasworks had been closed, at Harrow and Staines, and thereby a saving of many thousands of pounds had been effected. The Board was turning more and more to the use of oil as a cheaper raw material for gasmaking, and last year the efficiency of coal conversion was increased with a resultant saving at the rate of nearly £100,000 a year. But, he went on, the financial results of this continued and successful research for technical and administrative efficiency were obliterated by blows of the magnitude that had just been experienced.

The Board, Mr. Milne-Watson said, had in mind the need to keep the price of gas stable, if at all possible. Consumers, whether they used gas in their homes or in their businesses, wanted to be able to look ahead for a reasonable time in planning their fuel requirements, and nothing was worse for the gas business than uncertainty in the minds of the consumers about what the price was likely to be in the future. For that reason the Board did not wish to come forward at short intervals with alterations in price. He said that as the price of coal was general it must almost inevitably affect the price the Board have to pay for other goods and services, and probably at no distant date. It therefore thought it prudent to try to provide against such increases in other costs.

Chancellor's Statement

The speaker brought the notice of the Council to a statement made by the Chancellor of the Exchequer in the House of Commons on July 25, which referred to the economic situation of the country. He had said: 'In response to the Government's request certain of the capital requirements of the nationalised industries will be reduced in the immediate future, in two ways. First, expenditure on capital projects will be postponed or slowed up as far as may be possible with due regard to contractual obligations and economic administration. Furthermore, the nationalised industries will, so far as is practicable, increase their internal resources available for capital purposes.'

Mr. Milne-Watson said that the Board had already taken stock of its capital projects and had for the time being deferred a number of them—to a total of about £5 mill. The Board felt obliged to have regard to the economic policy of the Government, and there was now only one way in which it would appreciably increase its internal resources for capital purposes, namely by making suitable provision in the price of gas.

As well as the net increase in the cost of coal, after allowing for increased revenue from coke and breeze, Mr. Milne-Watson said that there now had to be met increases in freight and lighterage and a falling off in the sale of hire-purchase business. The known additional expenses that the Board would have to bear were estimated at £482,000 net in a full year, and this figure did not take into account any increase in material costs which were almost certain to be incurred in the near future, nor any provision for capital purposes.

To provide the necessary revenue the Board proposed to increase the price of gas by one penny on every therm at the flat-rate price, including the first block of every block rate. In the case of the two-part rates, equivalent increases would be made on the standing charges; special rates such as the public lighting rate would bear proportionate increases. The increase would take effect as from meter readings on or next after October 2. For the average domestic consumer this would mean an increase of 2½d. a week on his gas bill.

Mr. Milne-Watson said that the Board, before deciding to apply the increase in this way, had reviewed the increases in price that had taken place not only since Vesting Day but for some years previously. Over the years the position of large consumers such as public bodies, caterers, hotels, newspapers, and others had relatively, steadily worsened, and the Board had come to the conclusion that the time had come to call a halt to the process. Otherwise the Board's position in a highly competitive fuel market would be weakened and the result could only be damaging to the business as a whole. It was for that reason that the increase would not be applied to the commodity rates of the two-part rates or to the second and subsequent blocks of the block rates. But everyone would, of course, bear some increase. He said that it was his personal hope that the increase would be the last for a very long time.

In the discussion that followed Mr. Milne-Watson's announcement he was asked how the Board was tied to dealing with the Coal Board, if the dealings were exclusive or could it make its own purchases, for instance from foreign coal suppliers. He replied that all coal was bought exclusively from the N.C.B., and in the case of foreign coal it was a very good thing that that was so. Otherwise the gas boards would have to pay an unsubsidized price for imported coal. There was, however, the alternative of making use of oil. The Board, he said, is allowed to buy up stocks of oil from anywhere in the world. But the amount of plant in existence for the carbonizing of coal was immense, and it would not be practical to buy more than a certain amount of oil.

Mr. Milne-Watson was asked if gas was still sold at cut prices to some consumers. He replied that there was not but that certain public lighting concerns were allowed some discount. He agreed that this was not a fair policy, but said that this discount had been halved since 1941, and it was hoped eventually to abolish it.

Oil Supplies

A lady member of the Council asked if the greater use of oil would not make its price rise as well as that of gas. She was told that sufficient oil existed to supply the entire world until the Atomic Age was well established, but the price would certainly rise a little if the Middle East powers had anything to do with it. There were, however, vast fields of oil ready to be exploited in Canada, America, Venezuela, and the U.S.S.R.

Alderman D. Wray asked why coal was exported at one price while a similar quantity of coal was imported at a much greater price. Mr. Milne-Watson said that this situation would soon be remedied by the Government, who had decided to supply coal only to Denmark and the Netherlands in order to secure essential imports of butter, eggs, and bacon. Mr. H. J. Scott proposed the resolution that the Board's decision should be accepted. It was passed unanimously.

Mr. Bayliss, the Chairman of the Council, told Mr. Milne-Watson that although the Council regretted the increase, they realized that the Board was helpless in the matter. It was to be hoped that in the future there would be a reduction in the price of gas, bought about by the use of oil or atomic power.

Gas Industry's Sales Increase

The Gas Council announces that sales of gas in the year ended March 31, 1955, were 4½% higher than in the previous year, the increase being especially marked in industrial sales, which were up by 9%. Sales to domestic consumers were 2% higher, and commercial and other sales were over 6% higher. Preliminary indications for the April-June quarter show a further increase of about 4% over the corresponding period of 1954. Figures for the sale of appliances for the January-March quarter show the first effects of the hire-purchase restrictions imposed in February. Nevertheless, over the whole 12-month period to March 31, 1955, sales were generally higher than in the previous year. Cooker sales were up by 4½%, water heater sales by 92%, refrigerator sales by 83%, and washing machine sales by 171%.

Gas Sales

In January to March, partly due to the cold weather, gas sales were 5% above the corresponding period of the previous year, bringing the financial year's total to 4½% above 1953-54. Provisional figures for April to June again show an increase of 4%. All area boards have increased their sales of gas. In the year ending March, 1955, sales to domestic consumers increased by nearly 2%. Industrial sales were at a high level throughout the year, and an increase of 9% over the previous year was achieved. Commercial and other sales also increased by over 6%. The effect of tariff changes on revenue received in the year was small. The average revenue per therm of gas sold rose by a little over 1%.

Gas Production

The increased sales were met mainly by increasing the production of water gas which requires no coal. The production of coal gas in the year ending March, 1955, increased by 1.6%, and the quantity of coal used by 1.3%, but water gas production increased by 20%, and the use of oil in water gas by 24½%. It is of interest to note that in the year the gas industry used nearly 7 mill. gal. of heavy oil in oil gasification plants and in water gas plant. The quantity of gas purchased from coke ovens and oil refineries increased by nearly 7½%.

By-products

The production of coke increased by ½% as compared with the previous year. Statistics for the financial year indicate that sales of coke were more than 5% up on the previous year. Provisional statistics for April to June, 1955, show a further increase of 8% as compared with the corresponding period of the previous year. Crude tar production increased by 2%, and crude benzole production by 4½%.

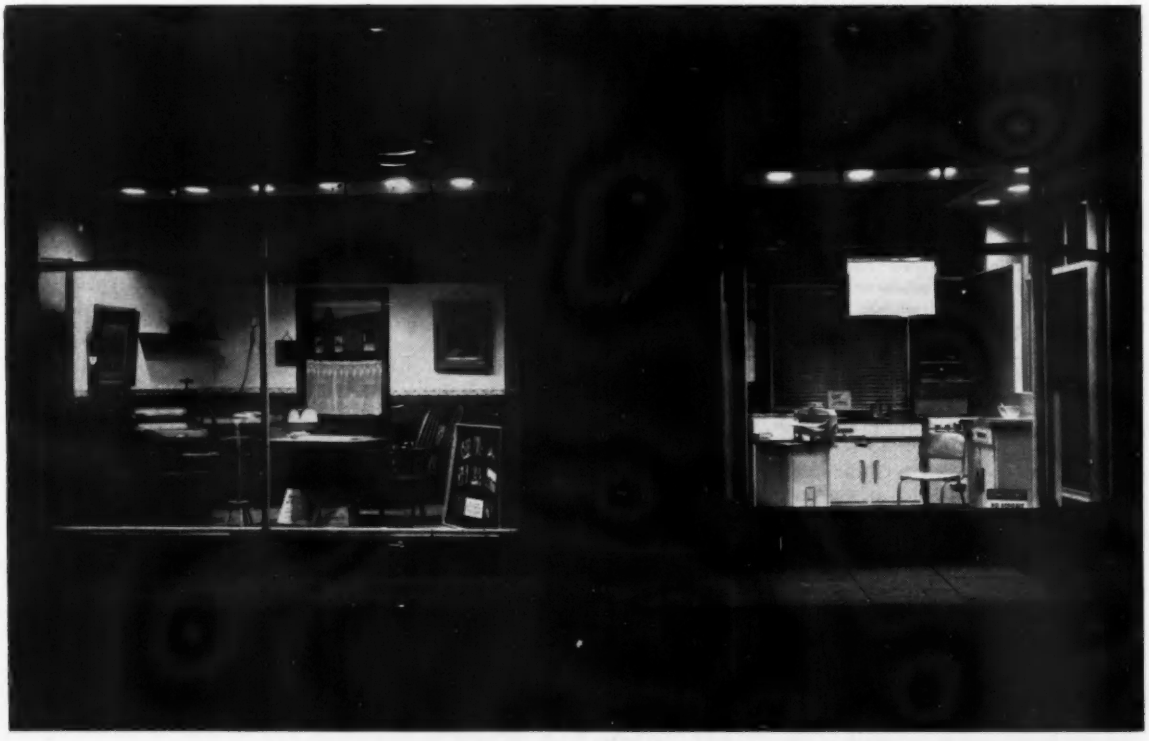
Appliances

The restrictions imposed in February reduced hire purchase sales of all appliances. In the quarter October to December, 1954, about 225,000 cookers had been sold for cash or on hire-purchase, but in January to March less than 175,000 were sold. However, for the year sales of cookers were 4½% above the level of the previous year. Water heater sales on hire-purchase were also reduced in the January to March quarter below the level of the previous year. In the financial year water heater sales increased by 92%, washing machines sales by 171%, and refrigerator sales by 83%.

Capital Works

New gasmaking capacity to a total of 137 mill. cu.ft. per day was completed and brought into operation during the year ending March, 1955. This is approximately 5% of the capacity available at the beginning of the year. In the year there was a net increase of 2,515 miles of mains, an increase of 10% on the net mileage laid in the previous year.

KITCHENS: OLD AND NEW



To commemorate the presentation of a Charter by H.R.H. the Princess Royal, whereby the Urban District of Castleford was made a Borough, the above display was erected in the Castleford showroom by the Drighlington Display Department. Its theme was 'Half a Century of Progress,' and it took the form of a mock-up kitchen of the 'nineties contrasted with an up-to-date version of the same kitchen complete with the latest streamlined gas appliances (North Eastern Gas Board).

Mobile debreezing screens

This popular machine, fed by mechanised shovel, can debreeze stock piled coke at a rate of 40 tons per hour.

It will feed both portable stackers and Corts mobile bagging units which load at lorry deck level.

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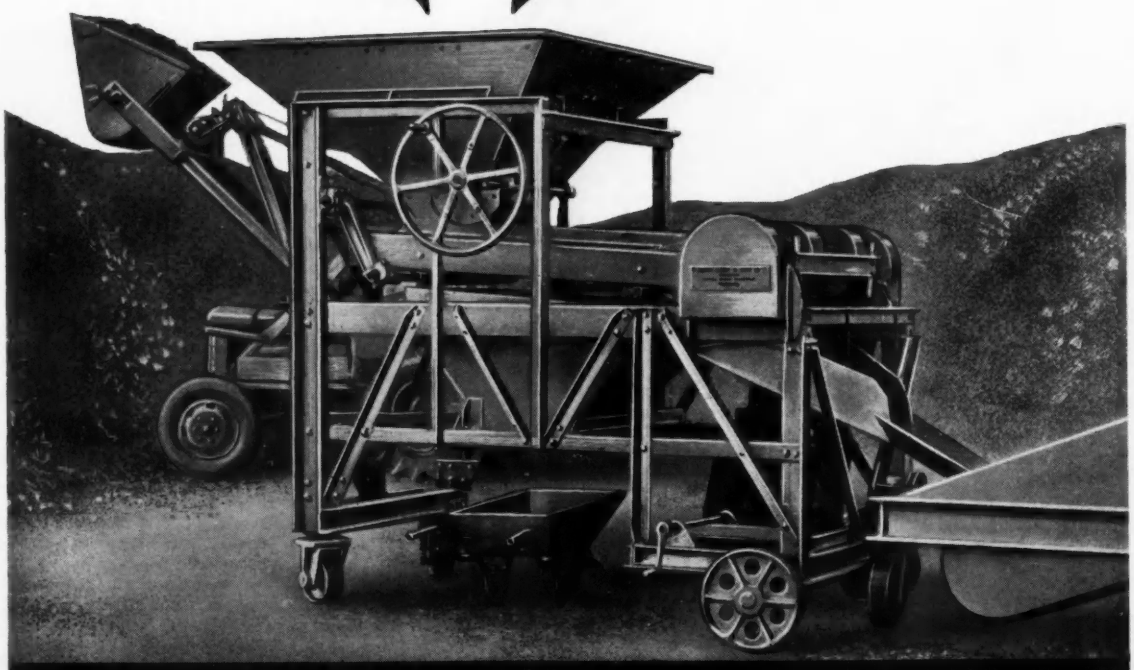

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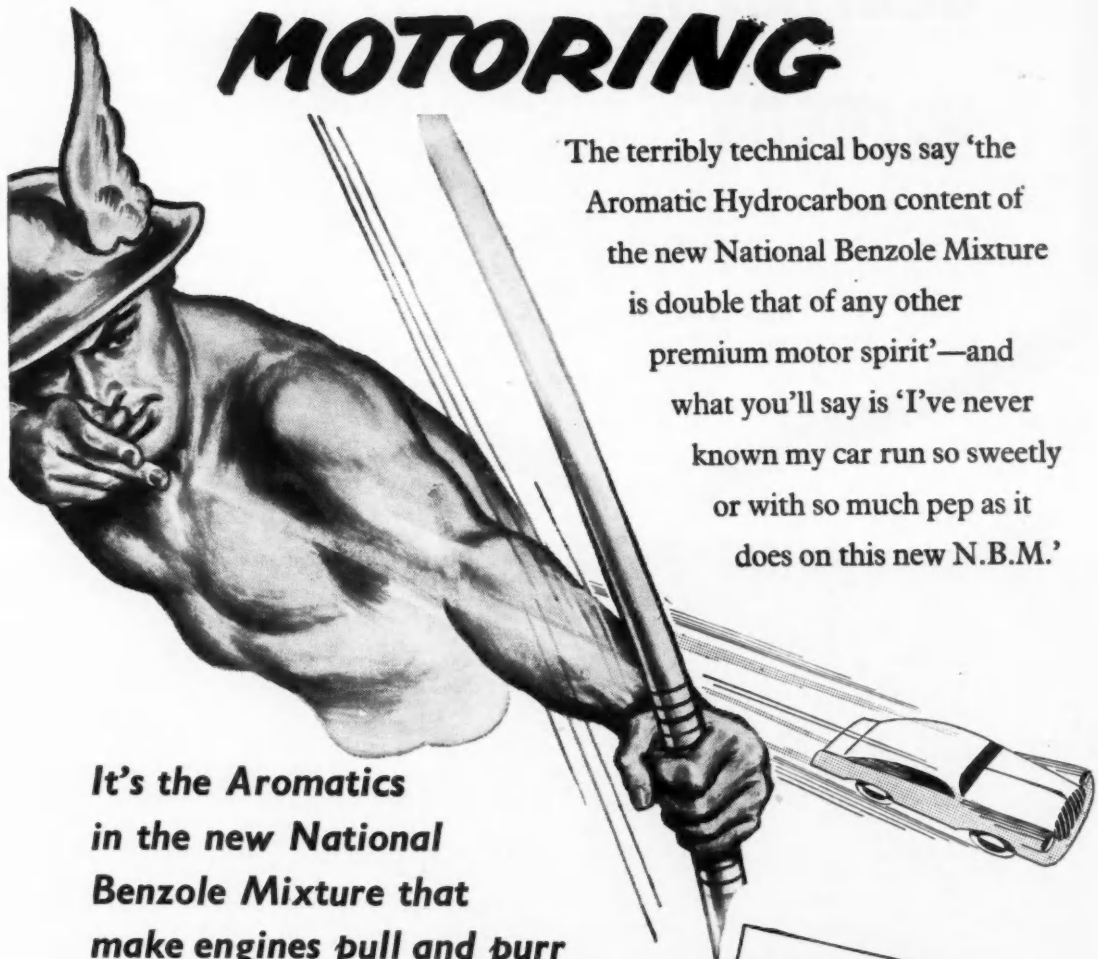

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Coal Price Protest

Newry Gas Committee has been informed that the overdraft following the recent audit was £4,707 compared with £ ,500 last year. The auditor's report revealed that there was a gross trading profit of £4,101 compared with a trading profit of £5,232 for the previous year. Estimated increases in costs for the ensing year were given at £5,515, of which the coal increase would be £3,495.

If the financial position of the undertaking was to be maintained, the report said, it would necessitate an increase of 8 . per 1,000 cu.ft. in the price of gas and an increase of 6s. 8d. per ton in the price of coke. The new price of gas would be 9s. 11d. per 1,000 cu.ft.

Mr. J. Collins, Manager, said the increases in the price of coal over recent years had accounted for 4s. 8d. in the increased price of gas. Nearly all gas undertakings in Northern Ireland were increasing the price of gas. Omagh gas now cost 11s. 6d. per 1,000 cu.ft.; Portadown 10s. 5d., while Lurgan and Lisburn with the same price as Newry (9s. 3d.) were contemplating increases. The Newry increase would cost the consumer 4d. per week approximately.

It was agreed that a request be made to the Ministry for a subsidy under the Aid to Industries Bill.

It was also decided that the Council should be asked to protest to the Government about the continuous rise in the price of coal.

Coking-coal Finds in Scotland

It has now been established that coking coal measures exist in the Bearsden region, just north of Glasgow, but it is too early yet to say whether the pocket is economically workable or not. The present position was described by the National Coal Board in Glasgow, when it was stated that two borings have shown coal 4 ft. thick at depths of 50 and 75 fathoms. A further three bores are being made. If these show that the seam continues it is almost certain that a small working will be established. The amount of coal and the lift of the working are not yet known. The Board is under statutory obligation to extract the coal, if it is workable, and in any case they will be anxious to do so since coking coal is scarce.

Lancashire Dynamo Holdings have announced the formation of a new company in Australia, the Lancashire Dynamo Coates Pty., Ltd. This development follows upon nearly 30 years representation of Lancashire Dynamo companies in Australia by Coates & Co., Pty., Ltd. As well as selling the industrial range of the Group, some products are now being manufactured in Australia, in particular rectifiers and associated transformers. The new company will handle all enquiries in the State of Victoria, South Australia and Tasmania from their Head Office in Melbourne and a branch office will cover New South Wales.

MORE LONG SERVICE AWARDS

Beckton works, as usual, provided a large proportion of long-service men. Here are eight of them photographed just before the presentations were made.

Thirty-two employees of the North Thames Gas Board, each with 40 years service to his credit, were recipients of long service awards at a recent presentation ceremony. The ceremony was held at the Board's office in Westminster and the awards were made by Mr. Michael Milne-Watson, Chairman.

In congratulating the recipients on their record of service, Mr. Milne-Watson also paid tribute to the men's wives, also present at the ceremony, on the work they carried out behind the scenes in keeping their menfolk happy and healthy. He also referred to the records of family service, a feature of the industry as a whole, the majority of that afternoon's recipients having had grandfathers, fathers, and other relatives who had also worked for the industry.

An interesting feature of this ceremony was that, for the first time, two brothers were present, both having completed their 40 years with the Board at the same time. They were James and John Gipson (it was actually James' 60th birthday on the day he received his presentation), who are both employed at Beckton gasworks. Their father and two more brothers have also worked for the Board, all with long service, the family total being 204 years.

Gas Industry Prizewinner

The Leverhulme Prize for the best paper on cost accountancy in the final examination of the Institute of Cost and Works Accountants has been awarded to two candidates. One is an accountancy assistant with the North Cheshire Group of the North Western Gas Board. He is Mr. Edward Theodore Topham, B.A. (HONS.), aged 29, of 438, Buxton Road, Stockport, Cheshire. The prize is also awarded jointly to Mr. John Arthur Goldsmith, M. A., A.C.A., a chartered accountant. There were 1,108 candidates for the whole or part of the final examination, of whom 200 passed the complete examination, 43 passed part A only, 183 passed part B only, and 682 failed.

Road Haulage Disposal

The Minister of Transport and Civil Aviation, Mr. John Boyd-Carpenter, announced recently that the Government had decided not to dispose of such vehicles as would be required by the British Transport Commission for the continuation of the trunk service network. The Government have decided that it would be reasonable to leave with the Commission 7,750 general haulage vehicles for the purposes of the trunk service network. This is instead of the 2,350 general haulage vehicles to be retained under the Transport Act, 1953. As a result of this decision there will still be about 2,300 vehicles for disposal.

Gasworks Closing

The gasworks at Chatteris, Cambs., which were opened in 1855, have now ceased production and the gas required for the district will in future come through the mains which link up Peterborough, Wisbech, March, Whittlesey and Chatteris. The Whittlesey gasworks were closed in June last, and the production at Peterborough gasworks will be augmented by the March and Wisbech gasworks. The showrooms in High Street Chatteris, will remain open.

New World S.30 Speedlyn Water Heater

In developing the New World 'S.30 Speedlyn' single-point storage sink heater the aim of Radiation, Ltd., has been to provide a high rate of hot water delivery with simple fixing and low running cost. It is claimed that the combination of moderate gas rate and the use of well-tried materials ensures that the heater may be confidently left for long intervals between inspections. Its 1½ gal. capacity

Rapid heating, single point, storage gas water heater with push-button Regulo.

and rapid re-heating rate are said to enable it to cope with all normal demands at sink or basin.

The water container is of tinned copper, fitted with drain outlet and cap. Through this container passes the combustion tube comprising heat exchanger of heat-resisting and corrosion-resisting Radaloy, as used in all New World circulators, tinned copper sheath forming the water face, and conducting material between these components. The internal baffle is of heat-resisting steel. The cast-iron burner is fitted with 12 Bray jets, pilot-operated thermo-cut-off safety valve and a pressure point, and is secured to the combustion tube. Gas connection is by ½ in. B.S.P. union, and gas passes through a push-button Regulo embodying main and pilot gas filters, and main and pilot gas adjusters. The cold water connection is a ½ in. B.S.P. union elbow attached to a fitting carrying water adjuster and broken feed device. The outlet consists of a weir tube flared at the upper end to minimize risk of scale blockage, with a siphon having a removable cap for cleaning, and a chromium-plated swivel spout of nominal ½ in. bore and 7½ in. span is attached to the lower end of the weir tube. The whole is enclosed in a vitreous-enamelled outer case secured by an unobtrusive screw. The pilot and push-button control are reached through ports provided in the outer casing. The vitreous-enamelled flue outlet is specially designed to direct the products forward to minimize wall staining. The back of the heater is lagged for the same purpose.

The input to the heater is 15,000 B.Th.U. per hour. When lighted the pilot operates the thermo-cut-off safety device which opens to allow gas to pass to the burner. The main burner is lighted by pushing in and releasing the Regulo button. The Regulo is set to close when the water has reached 140°F., which takes about 10 minutes from first lighting. Time for re-heating will usually be no more than 6½ to 7 minutes because of residual heat in the appliance and heat from the pilot flame. The operation of the Regulo shuts off the main burner gas completely, thus there is no maintenance gas consumption other than that of the pilot. Normal rate of water flow is 2 gal. per minute.

Coke Production at Weston-super-Mare

A party which included coal merchants and domestic solid fuel appliance distributors visited the Weston-super-Mare gasworks on August 10. The visit was arranged by the Salisbury Joint Service Committee of the Coal Utilization Council, and particular interest was taken in coke production.

Mr. H. W. Fleming (William Gibben & Sons, Salisbury, C.U.C. Panel members), Chairman of the committee, thanked Mr. W. T. Narborough, Technical Assistant to the Production Engineer, South Western Gas Board, for making the arrangements, and said that he looked forward to the time when coke supplies at Salisbury would be adequate to meet the demand.

Other members of the party included Mr. W. H. Conduit (Woodrow & Co., Salisbury, Panel members), and the following coal merchants: Mr. R. Male and Mr. Curtis (Clarke, Lush & Co.), Mr. F. V. Pullen and Mr. P. J. Gray (F. Bird & Co.), of Salisbury; and Mr. W. P. S. White (G. W. Talbot & Son, Downton).

Retirement Ceremony at Plymouth

A triple presentation was made recently at the Coxside works at Plymouth of the South Western Gas Board to retiring employees. The ceremony took place in the presence of a large number of fitters at 8.15 a.m., before they started their day's work. That early time was chosen because it was the only one at which the entire fitting staff could be together in one place. The presentations were made to three employees, Mr. Frank Adams, a district inspector, who retires after half a century of service; Mr. George Monk and Mr. Sydney King, two first-class fitters, who retire after 44 years service each. They all received cheques from the Board and Mr. Adams received a gramophone record cabinet and cigarette lighter, Mr. Monk an inscribed barometer and pipe, and Mr. King a wristlet watch and pipe.

The presentations were made by Mr. J. W. Dean, divisional manager for Plymouth and Cornwall, who also handed the three men long service certificates.

Extensions at Walsall

Work is proceeding rapidly on the construction of the extensions to Walsall's gasworks which will virtually provide the borough with a new plant. It is expected that the major part of the extensions will be completed within the next two years. These extensions include two new gasholders at James Bridge and a new carbonizing plant at New Mills, which when completed will have an output of 18 mill. cu.ft. of gas per day. At James Bridge preliminary work on one of the gasholders has been almost completed. At present it is 48 ft. high, and when completed and fully inflated both holders will reach a height of 230 ft. Each has a diameter of 234 ft.

Gas will be brought to the holders from the main works at New Mills. To assist in the distribution from the holders, a booster station will be built on the site. This will distribute most of the gas from the holders to domestic and industrial undertakings in the surrounding area. Part of the gas will also be distributed through New Mills. More than 50,000 tons of earth were taken from the site when levelling the ground and preparing the foundations for the holders. Their capacity, when completed, will be three times greater than at New Mills.

Mr. S. H. Lawrence, Walsall district manager, said that part of the new carbonizing plant was now in operation, one retort house being used. In addition, the concrete gantry, with which a 50-ton crane would be used to carry oxide of iron for use in the retorts, was near completion. This was expected to be ready by the end of the year. He pointed out that though the gantry would be completed, it would not be used until the extensions were complete in 1957. About one-third of the work had been completed. When in service, the works would not only produce gas more efficiently, but would be one of the most modern in the country.

The new works is being developed by the West Midlands Gas Board. Before nationalisation, plans by Walsall Corporation envisaged a plant costing about £800,000. It is understood that the new plant is on a much bigger scale.

When completed in 1957, the works will then not only supply Walsall but also the surrounding area in conjunction with other gas undertakings. It is to be one of the key production stations for the Midlands. Present production of gas is in the region of six mill. cu.ft. per day; and it is planned to step this up to 18 mill. cu.ft. per day.

The Latest Edition of the Technical Survey which is published twice a year by the Copper Development Association gives a comprehensive review of recent technical developments in the production, properties and applications of copper and its alloys, with an extremely useful bibliography. A copy will be sent free to any reader who makes a personal application to the Copper Development Association at Kendals Hall, Radlett, Herts, with a request to be placed on the mailing list for future issues.

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SPECIALLY ACTIVATED OXIDE OF IRON

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Highest prices paid for Spent Oxide

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for resale to the public and in bulk for works use.

BALE & CHURCH, LTD.
7, CROMPTON WAY, CRAWLEY, SUSSEX

APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

TECHNICAL SALES ENGINEER with general technical education and some plant experience, required by leading Company of Instrument and Automatic Control Manufacturers. Car allowance and expenses paid, contributory pension scheme, etc. To operate in Gas Board areas from Midlands to Scotland and preferably based in Manchester, Leeds or Sheffield areas. Good salary and plenty of scope for initiative. Expenses met for London interview any day. Apply: No. 254, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

WASHING MACHINE ADVISER required for demonstrating the Parkinson "Live Water" washing machine at Exhibitions and to personnel of the Gas Industry. The work is interesting and varied. Preference will be given to ladies already trained in similar work, but specialised training will be provided. A good standard of education is essential, together with pleasing manner and speech.

The selected candidate will be required to travel extensively and to be a resident of the Birmingham area. Generous salary and permanent position.

Apply to Personnel Manager, Parkinson Stove Co., Ltd., Iron Lane, Stechford, Birmingham, 33.

SOUTH WESTERN GAS BOARD

BRISTOL/BATH DIVISION
APPOINTMENT OF TECHNICAL ASSISTANT

APPLICATIONS are invited for the above post within the Division. The salary will be within Grades A.P.T. 5-7 (£530-£700) according to experience and ability.

Applicants should have had good all round training and experience in gas manufacture, and for preference should be Associate Members of the Institution of Gas Engineers.

Applications, together with the names of two referees should be received by the undersigned not later than Saturday, September 10, 1955.

CHARLES R. INGHAM,
Production Engineer & Manager.

Radiant House,
Bristol, 1.

SOUTH WESTERN GAS BOARD

BRISTOL/BATH DIVISION
APPOINTMENT OF CHEMIST

APPLICATIONS are invited for the position of CHEMIST at Works within the Division.

Applicants should be familiar with all Gas Works Chemical Tests and Chemical Control of Plant.

Possession of the Higher National Certificate in Chemistry is desirable and the Ordinary National Certificate is a minimum qualification.

The salary will be within Grades A.P.T. 5-7 (£530-£700).

Applications, together with the names of two referees should be received by the undersigned not later than Saturday, September 10, 1955.

CHARLES R. INGHAM,
Production Engineer & Manager.

Radiant House,
Bristol, 1.

WEST MIDLANDS GAS BOARD

WALSALL AND DISTRICT DIVISION
ASSISTANT DIVISIONAL DISTRIBUTING ENGINEER

CANDIDATES should have experience in practical mainlaying and the handling of large projects involving the use of contractors labour. Possession of the Institution of Gas Engineers' Certificate in Gas Engineering (Supply) would be an advantage.

The salary for the post will be within Grade II (£785-£910 per annum) of the National Salary Scales for Gas Staffs.

The post is pensionable and the successful candidate may be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names of two referees, should be addressed to Mr. F. Harvey, Divisional General Manager, West Midlands Gas Board, Walsall Factory Estate, Tame Bridge, West Bromwich Road, Walsall, to reach him within fifteen days of the appearance of this advertisement.

J. C. INGRAM,
Secretary to the Board.

WEST MIDLANDS GAS BOARD

WORCESTERSHIRE-HEREFORDSHIRE DIVISION
ASSISTANT ENGINEER AND MANAGER, KIDDERMINSTER GROUP

CANDIDATES should be corporate members of the Institution of Gas Engineers, and have had experience in the administration and technical supervision of a medium-sized Undertaking.

A suitable dwelling house in a residential locality is available on a Service Tenancy Agreement if desired.

The salary will be within Grade 10 (£760-£860 per annum) of the National Salary Scales for Gas Staffs.

The post is pensionable, and the successful applicant may be required to pass a medical examination.

Applications, giving details of training, qualifications and experience, together with the names of two referees, should be addressed to Mr. C. F. W. Rendle, Divisional General Manager, West Midlands Gas Board, Newtown Road, Worcester, to reach him within fifteen days of the appearance of this advertisement.

J. C. INGRAM,
Secretary to the Board.

WEST MIDLANDS GAS BOARD

WALSALL AND DISTRICT DIVISION
DRAUGHTSMAN

APPLICATIONS are invited for the post of DRAUGHTSMAN in the Divisional Engineer's Department, located at Smethwick.

Candidates should have had experience in the design of light structural steelwork and/or pipework. Possession of the Ordinary National Certificate in Mechanical Engineering would be an advantage.

The salary for the post will be within Grade A.P.T. 7 (£620-£700 per annum) of the National Salary Scales for Gas Staffs.

The appointment is superannuable, and the successful candidate may be required to pass a medical examination.

Applications stating age, qualifications and experience, together with the names of two referees, should be addressed to Mr. F. Harvey, Divisional General Manager, West Midlands Gas Board, Walsall and District Division, Walsall Factory Estate, Tame Bridge, West Bromwich Road, Walsall, to reach him within fifteen days of the appearance of this advertisement.

J. C. INGRAM,
Secretary to the Board.

NORTH WESTERN GAS BOARD

NORTH CHESHIRE GROUP
SENIOR TECHNICAL ASSISTANT (PRODUCTION)—STOCKPORT WORKS

APPLICATIONS are invited for the above pensionable appointment at a salary within Grade A.P.T. 10 (£760/£860 per annum).

The successful applicant will be responsible to the Station Engineer for the operational supervision and technical control of a Woodall-Duckham continuous vertical retort plant and modern C.W.G. plant (total nominal capacity 15 mill. cu.ft. per day).

Applicants should possess the higher grade certificate (Gas Engineering-Manufacture) of the Institution of Gas Engineers or an equivalent qualification.

Detailed applications, giving the names of two referees, should reach the General Manager, N.W.G.B. (North Cheshire Group), Great Portwood Street, Stockport, within 14 days.

WALES GAS BOARD

APPOINTMENT OF ACCOUNTANT NEWPORT GAS UNDERTAKING, GROUP ACCOUNTANT, NEWPORT GROUP

APPLICATIONS are invited from qualified persons for the above appointment, for which the salary offered is £1,025 per annum. Experience of accountancy in the Gas Industry will be an advantage.

The person appointed will be attached to the Newport Gas Undertaking and will be responsible for the whole of the accountancy work throughout the Group. The successful candidate will be required to pass a medical examination and subject to any protected superannuation rights will be required to subscribe to the Board's Superannuation Scheme.

Applications furnishing personal details and particulars of experience and qualifications with the names of two referees should be sent to the undersigned to arrive not later than four weeks after the appearance of this advertisement.

C. B. MAWER,
Secretary.

2, Windsor Place,
Cardiff.

WALES GAS BOARD

PONTYPOOL UNDERTAKING
SHIFT SUPERINTENDENT

APPLICATIONS are invited for the position of SHIFT SUPERINTENDENT at the above Undertaking. Candidates should preferably have had experience on Woodall-Duckham Continuous Vertical Retorts, and should have technical training in all gas works ancillary plant and equipment.

The salary will be within Grade A.P.T. 6 of the National Council for Gas Staffs—Provincial "A"—£565/£645 per annum, plus housing allowance. The post is pensionable.

The successful candidate will be required to pass a medical examination.

Applications, stating age, technical qualifications and experience, together with the names of two referees to be received by the undersigned not later than September 10, 1955.

A. FACER,
General Manager.

Wales Gas Board,
Pontypool Undertaking,
Gas Offices,
Hanbury Road,
Pontypool.

WALES GAS BOARD

TECHNICAL ASSISTANT (ENGINEERING)
PONTYPOOL UNDERTAKING

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT (Engineering) to the Pontypool Undertaking.

Applicants must have had a good Drawing Office experience and be able to prepare works layout, pipe work and steelwork details. Experience with a Contractor and/or technical knowledge of Gasworks processes will be an advantage. Possession of the Higher Grade Certificate in Gas Engineering or equivalent qualification will be an advantage.

The commencing salary will be within Grade A.P.T. 7 (Provincial A) (£620/£700) per annum of the National Salary Scale for Gas Staffs. The post is pensionable.

The successful candidate may be required to pass a medical examination.

Applications stating age, qualifications and experience, together with details of present and previous appointments and the names of two referees, should be received by the undersigned not later than September 10, 1955.

A. FACER,
General Manager.

Gas Offices,
Hanbury Road,
Pontypool, Mon.

(*Classified advertisements continued on page* 580)

APPOINTMENTS VACANT (ctd.)

DESIGNER aged 25 to 40 required for work in new and expanding field of dust control. Successful applicant will eventually be responsible for complete design of welded fabrications associated with dust control. Applicants should be at least H.N.C. standard and should have served an engineering apprenticeship. Previous experience of this kind of work in connection with chemical and gas plant and some electrical knowledge desirable. Starting salary according to age and experience. Reply in writing stating age, qualifications, experience and present salary to W. C. Holmes & Co., Ltd., Huddersfield.

DRAUGHTSMEN.—Applications are invited from Senior and Junior Draughtsmen to fill positions which have resulted from our expanding commitments. The work would involve the design and detailing of welded fabrications, pipework and light steel structures in connection with major installations. Excellent prospects of subsequent promotion exist for persons having initiative and an ability to accept responsibility. Candidates should apply in writing to W. C. Holmes & Co., Ltd., Huddersfield, giving full details of previous experience, etc.

DESIGNER aged 25 to 40 required for work in new and expanding field of dust control. Successful applicant will eventually be responsible for complete design of dust control and ventilation systems and equipment. Applicants should be at least H.N.C. standard and should have served an engineering apprenticeship. Previous experience of this kind of work desirable but not essential. Starting salary according to age and experience. Reply in writing, stating age, qualifications, experience and present salary to W. C. Holmes & Co., Ltd., Huddersfield.

NORTHERN GAS BOARD

DARLINGTON DIVISION
TECHNICAL ASSISTANT

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT at the Darlington Unit.

Candidates should have experience with Continuous Vertical Retorts, Carburetted Water Gas and Ancillary Plant.

Preference will be given to applicants holding the Ordinary Grade Certificate of the Institution of Gas Engineers or equivalent, and the successful applicant will be required to undertake some shift duties.

The post is pensionable, and the successful candidate will be required to pass a medical examination.

Conditions of service are in accordance with the National Joint Council for Gas Staffs Agreement, salary—Provincial 'A,' Grade APT. 6—£565-£645 per annum, initial placing according to experience, plus an allowance for shift duties.

Applications, stating age, qualifications and experience, together with the names of two referees, should be addressed to Mr. Charles Hindle, Sub-Divisional Manager, Northern Gas Board, Darlington Division, Gas Offices, John Street, Darlington, not later than September 17, 1955.

F. WILSON,
Divisional General Manager.

EASTERN GAS BOARD

(TOTTENHAM DIVISION)
DEPUTY INDUSTRIAL SALES MANAGER

APPLICATIONS are invited from suitably qualified persons for the appointment of DEPUTY INDUSTRIAL SALES MANAGER.

Applicants should be Corporate Members of the Institution of Gas Engineers or possess other acceptable qualification. They should be used to dealing with all classes of industrialists and capable of assessing and exploiting opportunities for the application of gas to industrial processes, preparing quotations for gas installations and appliances, negotiating and completing sales and supervising installation work.

It is highly desirable that the applicants are experienced in the design of special industrial gas apparatus and central heating installations.

The duties will include, from time to time, the supervision of the technical, clerical and manual staffs.

The commencing salary will not be less than £1,000 per annum.

The successful candidate may be required to pass a medical examination and, unless already subject to a Pension Scheme by virtue of the Gas (Pension Rights) Regulations, 1950, will be required, if eligible, to join the Board's Staff Pension Scheme within six months from taking up the appointment.

Applications, stating age, qualifications and experience, should reach the Divisional Personnel Manager, Woodall House, 658, Lordship Lane, Wood Green, N.22, not later than September 16, 1955.

A VACANCY exists for a Design Draughtsman in the Development Section of a Birmingham Company, manufacturing brasswork for domestic gas appliances. Staff Pension Scheme. Canteen. Applications stating age, details of experience and salary required to No. 255, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

JUNIOR DRAUGHTSMAN required by NORTH THAMES GAS BOARD in the Constructional Department of the Drawing Office at GASWORKS, BECKTON, E.6. Applicants should be between 21-25 years of age, preferably holding the Higher National Certificate. Knowledge of general process plant on a Gasworks would be an advantage.

Starting salary within the range £505-£640 per annum depending on age and qualifications.

Applications to Staff Controller, North Thames Gas Board, 30, Kensington Church Street, W.8, quoting reference 666/274.

SOUTHERN GAS BOARD

OXFORD AND DISTRICT GAS UNDERTAKING

FIRST Class District Gas Fitter required for Oxford. Rate of pay 4s. 1½d. per hour. House available at a reasonable rent.

Applications giving age, particulars of training and experience should be addressed to S. C. Bentley, Engineer and General Manager, Oxford and District Gas Undertaking, P.O. Box No. 3, Therm House, St. Aldates, Oxford.

SOUTHERN GAS BOARD

CENTRAL DIVISION
NEWBURY UNDERTAKING
TECHNICAL ASSISTANT

APPLICATIONS are invited for the post of TECHNICAL ASSISTANT at the Newbury Works at a salary within Grade A.P.T. 5 (Provincial A) of the National Salary Scales (£530-£610 per annum).

Candidates should have had practical experience of modern manufacturing and laboratory practice preferably with continuous vertical retort plant and the usual ancillary processes.

The post is pensionable and the successful applicant will be required to pass a medical examination.

Applications stating age and experience and giving details of training and the names of two referees, should reach the undersigned not later than September 19, 1955.

ATHOL W. BROWN,
Group Manager.

P.O. Box No. 34,
King's Road,
Reading, Berks.
August 27, 1955.

SCOTTISH GAS BOARD

ALLOA/STIRLING SUB-GROUP—STIRLING DISTRICT
WORKS TECHNICAL ASSISTANT

APPLICATIONS are invited from qualified persons for the above appointment at Stirling Gas Works. Candidates should be experienced in the operation of continuous vertical retorts, C.W.G., and modern ancillary plant.

The salary will be within Grade A.P.T. 6 (£565-£645 per annum) of the National Provincial 'A' Salary Scales for Gas Staffs. The post is superannuable and the successful candidate may require to pass a medical examination.

Applications stating age, education, training, qualifications and experience, should be sent to the undersigned to arrive not later than Thursday, September 15, 1955.

W. M. GLEDHILL,
Sub-Group Manager.

Thistle Street,
Stirling.

SCOTTISH GAS BOARD

FIFE GROUP
KELTY DISTRICT SUPERINTENDENT

APPLICATIONS from suitably qualified Gas Engineers are invited for the position of SUPERINTENDENT to the Kelty District Undertaking operating under the control of the Cowdenbeath District. The Carbonising Plant consists of Horizontal (Hand Charged) Retorts and Tully Plants.

The salary offered is in accordance with the Board's Scale of Salaries Prov. 'B' A.P.T. 7, *i.e.*, £605 to £685 per annum with free house and fuel allowance equal to 400 Therms per annum.

The position is superannuated and a medical examination will be required.

Applications, endorsed 'Kelty Superintendent,' giving age, qualifications, training and previous experience (including Distribution experience), together with the names of two referees, should be lodged with the undersigned on or before September 20, 1955.

DAVID L. DICKSON, M.I.G.E., M.I.F.E.,
Group Manager.

Scottish Gas Board,
Grange Road,
Dunfermline.

EAST MIDLANDS GAS BOARD

LEICESTER AND NORTHANTS DIVISION
SENIOR TECHNICAL ASSISTANT (DISTRIBUTION)—NORTHAMPTON GROUP

APPLICATIONS are invited for the positio of SENIOR TECHNICAL ASSISTANT to the Group Distribution Engineer at Northampton. The commencing salary will be within the range £620/£740 per annum according to age and experience.

Applicants must at least hold the Ordinary Grade Certificate in Gas Engineering (Supply), should have a thorough knowledge of modern methods of distribution, including high and low pressure systems and be capable of carrying out the detail work in connection with the planning and estimating of new work.

The post is pensionable and the successful applicant may be required to pass a medical examination.

Applications, stating age and giving details of education, qualifications and experience, together with the names of two referees, should be addressed to Mr. E. B. Craddock, Group Manager, 45, Abington Street, Northampton, not later than September 17, 1955.

H. B. TAYLOR,
Divisional General Manager.

Leicester.
August 25, 1955.

EAST MIDLANDS GAS BOARD

NOTTS. & DERBY DIVISION
INDUSTRIAL GAS ENGINEERS

APPLICATIONS are invited for the above appointments in the Notts. and Derby Division. Applicants should have had experience in the design, construction and installation of Industrial and Commercial Plant.

The successful applicants will be responsible to the Divisional Fuel Services Officer for the development of Industrial Gas sales and will be located at Nottingham and Chesterfield.

The commencing salary will be within Grade A.P.T. 10 (£760/£860) and the initial placing on the scale will be according to experience and qualifications.

The positions are pensionable and the successful applicants will be required to pass a medical examination.

Applications stating age, experience and qualifications, together with the names of two referees, should be addressed to the undersigned to arrive not later than September 10, 1955.

K. L. PEARCE,
Divisional General Manager.

East Midlands Gas Board,
Notts. and Derby Division,
P.O. Box No. 62,
Friar Gate,
Derby.

CITY COUNCIL OF SINGAPORE

APPLICATIONS are invited for appointment of DEPUTY GAS ENGINEER on three years Agreement in the first instance, with prospects of emplacement on the Permanent Establishment on satisfactory completion of the Agreement.

Applicants must be Associate Members of the Institution of Gas Engineers with either (a) the Higher Grade Certificate of the I.G.E. in Gas Engineering (Manufacture), or (b) the Ordinary Grade Certificate of the I.G.E. in Gas Engineering (Supply). Must have preferably not less than 15 years' practical experience in the manufacture of both Coal and Carburetted Water Gas, have knowledge of the workings of all ancillary plants involved and experience in distribution. In addition must have considerable experience in administration, be capable of supervising and directing staff and labour and preparing plans for and supervising works extensions, alterations and installation of new plant.

The salary offered is $1,420, $1,470 and $1,520 a month for the first, second and third year respectively in the scale $1,420 by annual increments of $50 to $1,620, then by annual increments of $100 to $1,820 ($1 Malayan—2s. 4d.). Expatriation and Variable Allowances are also payable. Total emoluments on the salary of $1,420 a month are $1,785 a month (£2,499 per annum) for a single officer, $1,875 a month (£2,625 per annum) for a married officer with no children, and $2,015 a month (£2,821 per annum) for a married officer with one or more children.

Partly furnished quarters provided, if available, at 12½ per cent. of basic salary. Free air passages for officer appointed and family subject to certain limits, generous leave. Contributory Provident Fund.

Further details from the Council's London Agents: Messrs. Allen & Williams, 1, Victoria Street, Westminster, London, S.W.1. Closing date for full applications in DUPLICATE: Tuesday, September 27, 1955.

PLANT FOR SALE

FOR SALE: NEW GAS-FIRED BOILER by Hartley & Sugden. 160 lbs./hour at 80 lbs. p.s.i., complete with chimney, spare burner and controls. Original purchase price was £419. Our price £250. W. H. COLLINGBOURNE & CO., LTD., 14 1. Stratford Road, Birmingham, 28. Phone: Shirley 3303.

On truthfulness

"Liars come to a bad end," said Mr. Jingle. "Knew one once. Crocodile trainer in Bongoland. Talented man, very But told most awful stretchers. Said he put his head in croc's mouth every morning. Challenged him to show me." "Bless my soul!" exclaimed Mr. Pickwick. "And did he?" "Had no option," replied Mr. Jingle, "Shocking affair. Lots of blood. Trainer decapitated. Croc in great distress. Severe indigestion. Must have been the first effort, after all. Moral, stick to the truth. Like your humble."

(As Charles Dickens might have written)

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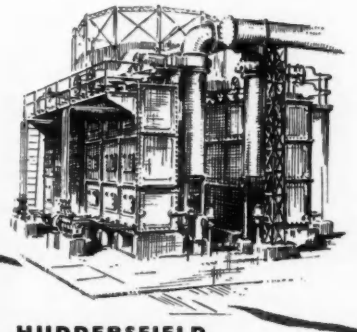

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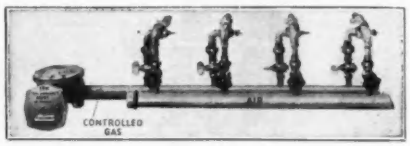

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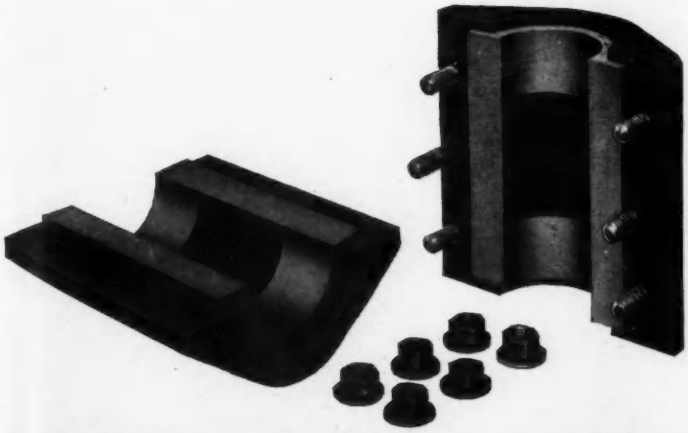

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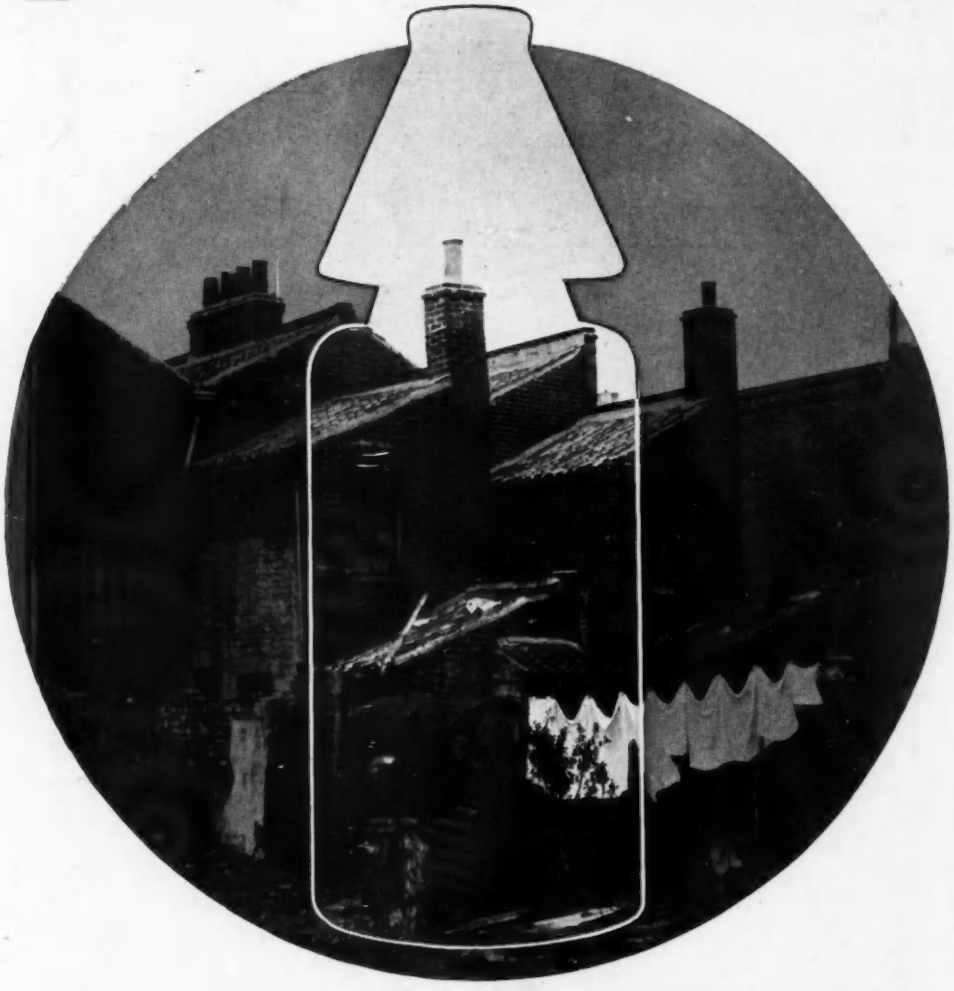

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